

COLONY OF MAURITIUS

ANNUAL REPORT

ON THE

DEPARTMENT OF AGRICULTURE

FOR THE YEAR 1928



PORT LOUIS
PRINTED BY P. G. BUMSTEAD, GOVERNMENT PRINTER
1930

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No. Rae
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THE HONOURABLE THE COLONIAL SECRETARY

I have the honour to submit the report on the Department of Agriculture and on the agricultural conditions in the Colony for the year 1928.

PART I

AGRICULTURAL CONDITIONS IN 1928

The weather conditions experienced during the growing and harvesting seasons are summarised in the annexed tabular statement.

<i>Month and year</i>	<i>Temperature</i>	<i>Rainfall</i>
1927		
November	... Slightly below Normal	... Markedly below Normal
December	... Below Normal	... Considerably below Normal
1928		
January	... Slightly above Normal	... Considerably below Normal
February	... Slightly above Normal	... Considerably above Normal
March	... Slightly below Normal	... Slightly below Normal
April	... Above Normal	... About Normal
May	... Markedly above Normal	... Considerably above Normal
June	... Slightly below Normal	... Markedly below Normal
July	... Slightly above Normal	... Normal
August	... Slightly below Normal	... Slightly below Normal
September	... do	... Slightly above Normal
October	... Markedly below Normal	... Below Normal
November	... do	... do
December	... do	... do

As will be seen from the above summary weather conditions have been, during the growing season, generally favourable and exceptionally so during the ripening season. As a result, the total outturn was perceptibly above the average and markedly above expectation. Cyclones have kept, during the season, at a safe distance from the Island.

SUGAR INDUSTRY

The preliminary compilation of factory results for the 1928 crop gave a total of 251.1 thousand tons i.e., approximately 7% above an average of 235 thousand tons.

Field returns have been specially good in the North, Flacq, Grand Port and Savanne. Owing to the favourable weather conditions experienced during the ripening season, the sucrose content of the cane was high and the recovery of sugar very satisfactory.

The following figures give the results, for each district, of the preliminary compilation of factory returns, compared with the production of the seven preceding years.

Sugar production in thousand metric tons

District	1928 Preliminary Compilation	1927	1926	1925	1924	1923	1922	1921
Pamplemousses & Riv. du Rempart	58.9	52.72	44.15	51.86	47.48	42.27	54.93	48.43
Flacq	40.9	33.21	26.02	43.06	39.06	35.51	39.56	33.77
Moka	34.2	30.88	31.27	34.68	30.73	31.34	29.39	28.04
Plaines Wilhems	16.6	15.06	17.14	18.18	18.79	15.01	20.95	14.54
Black River	9.8	9.03	7.18	8.66	8.47	7.17	8.65	6.15
Savanne	40.9	35.88	35.13	39.72	38.10	33.64	35.38	31.71
Grand Port	49.8	41.22	31.70	45.06	42.08	36.61	42.33	34.78
Total	251.1	218.00	192.59	241.22	224.71	201.55	231.19	197.42

Yield of vesou sugars. Of the estimated total of 251.1 thousand tons, 77% will, it is anticipated, consist of vesou sugars. The balance is almost entirely made up of *raws*. Owing to the English market conditions, the local sugar manufacturers have found it more advantageous, this year, to turn out a large proportion of *raws*. The following table exhibits the departure obtaining, this year, from the state of affairs which obtained during the past 10 years.

Year	% Vesou	Year	% Vesou
1919	94.45	1924	98.34
1920	95.46	1925	98.21
1921	95.98	1926	98.10
1922	97.20	1927	98.63
1923	97.61	1928	77.00 (estimated)

Factory work in 1928—The average extraction of sugar per cent of cane approximated to 10.7. Result for the previous decade are as follows:—

Year	Comm. Sugar % Cane	Year	Comm. Sugar % Cane
1919	10.42	1924	10.28
1920	10.76	1925	10.56
1921	9.90	1926	9.94
1922	10.58	1927	10.53
1923	10.51	1928	10.70 (Estimated)

Factories condition in 1928—One factory in Savanne district was closed during the year 1928. The total number of factories at present at work is 43.

New sugar machinery to the value of Rs. 730,849 was imported during the year and tramway material to the value of Rs. 410,680.

Area under cultivation.—At the end of 1927, the area under cane cultivation approximated to 157,700 acres i.e. a decrease of 4.4 thousand acres on the 1926 figure. Of these, plantations on Estates approximated to 83,500 acres, the balance being made up by small planters.

Indian cultivation.—At the end of 1927, the area cultivated by Indian sugar growers approximated to 70,600 acres. The proportion of Indian cultivated cane lands to the total land under cane remains at 44.7%.

Disposal of the sugar crop.—The Sugar Planters Syndicate continued operations during the year, controlling more than 80% of the sugar production of the colony. The average sale price for 50 kilos for 1927 was Rs. 9.61 net while low products fetched Rs. 6.66 net per 50 kilos.

The distribution in grades was as follows:—

Extra Fine	...	...	4.8%
Grade A	...	...	94.2
" B	...	...	0.7
" C	...	...	0.3
			100.0

Final figures for the 1928 crop are not yet available, but the approximate figure quoted viz, Rs. 7.95 net per 50 kilos is the lowest since 1913.

As during previous years, the bulk of the sugar production went to the United Kingdom. The movement of sugar during the export year 1927–28 was as follows:—

Destination	Quantity
Great Britain	196.7 thousand tons
America	12.5 " "
Australia	0.7 " "
Other Places	0.6 " "
	210.5 " "

Instrumental Cultivation.—Tractors and ploughs to the value of Rs. 22,309 were imported during the year 1928. The number of farm tractors, mostly Cletracs, in operation on Estates in 1927 was 112 as against 111 in 1926. No great change in this respect is apparent for 1928. Tramway material to the value of Rs. 410,680 was imported during the year.

Irrigation of Sugar Cane.—Work is still progressing on the Midlands Reservoir. During the year, an officer was detailed to Hawaii to study the practical irrigation methods in vogue there with a view to introducing, if possible, more economical methods of water application in Mauritius.

Pests and diseases of the Sugar Cane.—A new centre of infection of *Phytalus Smithii* was detected in the neighbourhood of Cluny along the railway line on an estate belonging to Mr. Lagesse. In all probability, this infection has been caused accidentally by the transport of sugar canes to estates at a time when the insect is in the adult stage and can be transported from one place to another. The foci of infestation are steadily increasing and leave but little hope that the pest can be restricted in spite of the low rate at which it is spreading. If on one hand, new areas are being gradually infested, on the other it is encouraging to record that the pest is disappearing in nearly the same proportion on areas already infested, and that the damage caused by it is therefore not more alarming. It must be admitted, however, that the money which is being spent every year for the destruction of *Phytalus Smithii* is a heavy burden on the Sugar Industry; for independently of the export duty of two cents per 100 kilos of sugar levied to defray the cost of the campaign of destruction and of the annual amount provided for by the Improvement and Development Fund, the expenditure incurred by planters to protect their crops when the degree of infestation necessitates the application of expensive methods should also be taken into consideration.

The persistent but vain efforts made until last year to restrict its extension have shown that the amount expended for this purpose would be more profitably used for the destruction of the insect in its larval state on a much larger scale.

This method which was put into force in 1928 resulted in the destruction of 70 millions of grubs in the district of Moka solely. Apart from the above, the application of insecticides, under the control of the officers of the Entomological Division has been greatly extended and it may be stated that by these means coupled with that of its natural enemy *Tiphia parallella*, the damage caused by this pest can easily be controlled without too heavy expenses. There exist no stronger reason now than in the past to anticipate that this insect will in future prove more harmful to the Sugar Industry.

The other sugar cane pests such as borers, locusts, aphids, scale insects as in previous years did not cause notable damage though all of them were more or less active in various localities, but in no case however as to cause serious losses.

In 1927, the attention of planters was directed to the damage caused by "Gummosis" which was then thought to be the main cause of the supposed degenerescence of White Tanna and also to the necessity of replacing that variety by new ones more resistant to this disease. On account of the proved value of this variety which possesses a remarkable range of qualities, systematic researches were undertaken and are still in progress in view of determining practical means of controlling the spread of this disease which affects more or less all the varieties cultivated in Mauritius.

In the the course of these researches, the Phytopathological Service of this Department ascertained that what was considered previously as Gummosis only comprise as a matter of fact two distinct diseases: "Gummosis and Leaf-scald" which in Mauritius as in many other countries had been considered as one. It has also been shown that White Tanna is susceptible of being affected by both diseases to the same extent. Leaf-scald is widespread over the island and the losses caused by it are greater than those occasioned by Gummosis. It is hoped that practical advice will soon be given to planters so as to cope successfully with these two diseases. For this purpose, careful investigations relating to the following plants have been undertaken:—

1. Disinfection of cane cuttings with a view to reducing the rate of these diseases;
2. Selection of healthy planting material for the establishment of Nurseries free from diseases with a view to obtaining the required planting material for starting industrial plantations.

These investigations are in progress in the Laboratory at Reduit and in varietal plots for the propagation of new varieties.

A series of lectures was delivered by the Botanist and the Assistant Entomologist to planters at Reduit and at Pamplemousses in view of diffusing and vulgarising knowledge in relation to insect pests and diseases of the sugar cane. The planting body took great interest in those lectures and agreed to defray the cost of the printing of a series of coloured charts drawn by Miss Edwards, showing the insects in their different stages and the appearance of canes attacked by these insects as well as by the various cryptogamic diseases. These charts are being printed in India at a reasonable cost owing to the courtesy of the Honourable R. Gujadhur. They will soon be distributed to planters who have subscribed for their printing.

As in previous years, the *Revue Agricole* was used as a semi-official journal for the dissemination among the planting body of all information respecting the diseases of sugar cane.

Investigations in relation to the Sugar Industry.—In view of carrying out the resolutions of the Sugar Conference of 1927 relative to the production of new varieties of canes and to the rapid propagation of those already raised, four experimental stations were established, of an extent of 10 acres each. These stations situated in the four most important sugar producing districts—*Savanne (St. Aubin)*, *Pamplemousses (Mon Rocher)*, *Moka (Alma and Valetta)*, *Flacq (Bonne Mère & Constance)*—have for object the determination in a systematic way and within the shortest period of the respective value of imported

and local raised varieties cultivated up to now at Pamplémousses and Reduit. Careful investigations have proved that these varieties are susceptible of being grown on a large scale. Owing to weather and meteorological conditions which vary in Mauritius within wide limits according to altitude, it was important at first to determine from these new varieties those best suited for each locality as those plots are treated in the same way as the other cane fields of the respective localities. The results obtained will enable a judicious selection of those under experiment.

For the same purpose and also to meet the increasing demand from planters a considerable number of cuttings of these different varieties have been sold to them for the establishment on their estates of nurseries where investigations can be carried out. It is hoped that these new arrangements will bring rapid progress from the point of view of utilization of varieties newly introduced and raised by the Department of Agriculture.

In order to create other new varieties on more scientific lines, Mr. A. de Sornay was sent to Coimbatore, India, for studying the modern technic in connection with cane hybridisation. A special experimental station has been provided for those investigations. It is noteworthy that the close intercourse between the Agricultural body and the Department becomes still closer every day and that planters generally realise the value of the researches undertaken to promote their interest.

New varieties were imported on three occasions from Java—the first, included P.O.J. 2878, the second P.O.J. 2725. Two only of the cuttings received germinated and were placed in a greenhouse built for that purpose; but for many reasons the plants obtained did not grow satisfactorily. The third consignment received by the Anglo-Ceylon Company contained several hundreds of cuttings which as the former ones were placed under observations in two quarantine greenhouses erected at the expense of the Sugar Industry Reserve Fund. The plants obtained from these cuttings are growing normally and as far as can be ascertained, are free from diseases and will be handed over to the Company to be planted in the open air towards the end of 1929.

General conditions in relation to the Sugar Industry.—From an economic point of view conditions continued difficult during the year. The market for sugar was unsteady, with a distinct downward trend. As a result, strenuous efforts have been made with a view to further decreasing the cost of production. Unfortunately, many estates are still burdened with heavy interests on what remains to be paid of greatly exaggerated purchased prices. To cope with present difficulties, planters have applied for and received a loan of Rupees Six Millions repayable by a special export tax on sugar of R. 0.50 per hundred kilos. The special duty of R. 0.50 per 100 Ks. levied since 1920 on all exported sugar was abolished by Ordinance 29 of 1928. The prevailing opinion in local agricultural circles is that the best way of putting the whole Sugar Industry on a sound basis would be by way of a large loan—Rs. 20 millions—with long terms and low interests, distributed in such a way that mortgages still burdening many Estates could be cleared and replaced by loans at a low rate of interest. The Chamber of Agriculture supports the idea, which is now receiving the consideration of local authorities.

SUBSIDIARY AGRICULTURAL INDUSTRIES

Mauritius Hemp.—Market conditions improved markedly during the year: Quotations for *Prime* rising to Rs. 410 per ton, while *Good* obtained Rs. 380 per ton. The export for the past ten years has been as follows:

Year	Ton	Year	Ton
1919	2,535	1924	1,247
1920	875	1925	2,158
1921	287	1926	2,869
1922	780	1927	1,905
1923	600	1928	2,496

The gross value of the fibre exported in 1928 was Rs. 843,446.

Tobacco Industry.—The Tobacco industry had to face a difficult period in 1928 owing probably to the fact that large stocks of leaf were on the market thus causing a corresponding slump in prices. This state of things which practically recurs every two years places this industry on such an unsuitable basis that the Tobacco Growers Association considered it necessary to request Government to appoint a committee to enquire fully into the matter and to suggest means for stabilising the Industry.

The committee appointed submitted a report embodying various suggestions amongst which:—

1. The improvement of the type locally grown.
2. The extension of the Virginian Varieties.
3. The compulsory centralisation of cured leaf in a Government Warehouse for standardizing the article and regulating the market price.

The progress made by this Industry from 1923 to 1927 is undoubtedly very encouraging and proves abundantly that with adequate legislation safeguarding the interest of growers as well as those of manufacturers, it is quite reasonable to believe that this Industry can be developed to a much greater extent.

This progress is evidenced from the following table which shows the value of imported manufactured tobacco from 1923 to 1927 and the considerable amount of money left in the island in the course of the five last years.—

1923	...	Rs. 1,800,000
1924	...	1,500,000
1925	...	750,000
1926	...	315,000
1927	...	200,000

There is a marked improvement in the quality of the tobacco due to the fact that the Virginian type is being grown on a large scale. Some growers have shown that this country can produce a first rate leaf which can compare with that of any other tobacco producing country.

It is interesting to mention the proportion in which the imports of tobacco and cigarettes from Reunion have decreased during the last eight years thus proving that smokers prefer imported yellow cigarettes and those manufactured from local leaves.

The imports of manufactured tobacco from Reunion for the last eight years are as follows:—

1920	...	Ks. 105,546	1925	...	Ks. 104,923
1921	...	119,897	1926	...	77,499
1922	...	161,352	1927	...	53,705
1923	...	130,725	1928	...	1,506
1924	...	124,927			

This result highly proves that tobacco manufactured in Mauritius can stand comparison with imported tobacco and there is reason to believe that if adequate protection is given to growers the industry will contribute to the welfare of the Colony.

Fruit Canning and Preserving.—No further progress has taken place in this respect during the year. A remodelling of the original terms on which the Association of Growers was expected to be founded, is contemplated and further assistance from Government expected.

Oil Crops.—The Innova Refinery continued operations during the year handling principally copra from the Oil Islands and ground nuts. Application for assistance from the Development Fund has been received by Government with a view to allowing the manufacturers to modernize their plant.

Alcohol.—The production of alcohol for the past ten years, according to Treasury returns, is as follows:—

1918-19	...	1,529,315 litres	1923-24	...	523,892 litres
1919-20	...	1,666,000 "	1924-25	...	638,196 "
1920-21	...	1,900,000 "	1925-26	...	490,113 "
1921-22	...	1,749,994 "	1926-27	...	688,077 "
1922-23	...	496,237 "	1927-28	...	825,208 "

There are at present 5 distilleries at work on the Island of which the largest is the one annexed to Medine Factory which produces alcohol for human consumption, power spirit and ethers for pharmaceutical and other purposes.

Coffee.—There is nothing special to report on this crop for the year.

Tea.—There has been some slight revival of the industry during the year and an application for assistance from the Development Fund has been received by Government.

Vanilla and Spices.—There is no progress to record in this respect.

Food Crops.—There has been but little change in this respect during the year. In 1927 the area under maize was estimated at 2000 acres and under manioc, at 3000 acres. Vegetables occupied about 3,500 acres and banana, potatoes and sweet potatoes together, about 1100 acres.

Live Stock.—Importation of cattle for food from Madagascar numbered 7,173 of a total value of Rs. 459,211 and for other purposes, 1095 heads of a value of Rs. 65,685.

AGRICULTURAL EDUCATION

The work of the Agricultural College is being dealt with in a separate report. The Farm School continued its operations on the lines mentioned in last year's report and the policy of establishing School Gardens where possible has been maintained.

Co-operative Credit Societies.—The work of these Societies is being reviewed in a separate report.

RODRIGUES

Full particulars respecting the Agricultural work in that Dependency are being given in Part II of this Report.

PART II

WORK OF THE DEPARTMENT OF AGRICULTURE FOR THE YEAR 1928

Staff Changes

Mr. D. d'Emmerez de Charmoy, Assistant Director and Entomologist, proceeded on leave of absence to Reunion on the 5th February and resumed duty on the 10th of April.

Mr. N. Craig, Lecturer in Agricultural Chemistry, proceeded on leave of absence on the 28th May. During his absence in England he represented the Colony at the International Dairy Congress held in June and July. Mr. R. Lincoln, Assistant Chemist, acted as Lecturer in Agricultural Chemistry; Mr. F. Berchon, Scientific Assistant Chemical Division, acted as Assistant Chemist; Mr. R. Rivalland, Junior Scientific Assistant, acted as Scientific Assistant and Mr. N. Rivalland acted as Junior Scientific Assistant during Mr. Craig's leave.

Dr. H. A. Tempany, Director of Agriculture and Registrar Co-Operative Credit Societies, went on leave of absence on the 5th July. Mr. D. d'Emmerez de Charmoy, Assistant Director and Entomologist, acted as Director of Agriculture and Registrar Co-Operative Credit Societies. Mr. E. F. S. Shepherd acted as Assistant Director in addition to his duties of Botanist and Mycologist. Mr. W. H. Edwards, Lecturer in Entomology, acted as Entomologist. Mr. A. Moutia, Scientific Assistant Biological Division, acted as Lecturer in Entomology and Mr. P. Ribet acted as Scientific Assistant Biological Division.

Mr. E. Lesur was appointed Irrigation Officer on the 27th June and proceeded on Study Leave to Hawaii Island on the 5th October.

Mr. A. de Sornay was appointed Cane Breeding Officer on the 3rd October. He left on Study Leave for Coimbatore on the 25th of October.

Mr. Ignace Félix, Clerk in Class VI, acted as Clerk V in the Immigration Department from the 28th September and was replaced by Mr. A. Ahtuam.

Mr. R. Olivier relinquished his appointment as Assistant Agricultural Instructor on the 30th April and was replaced by Mr. G. Bauristhène, Tobacco Inspector, on the 15th May.

Mr. E. Bedsy was appointed to the second post of Assistant Agricultural Instructor on the 1st January.

Mr. F. Pilot relinquished his appointment as Assistant Officer for Phytalus Destruction Moka on the 6th April and Mr. R. de Robillard was appointed to the post on the 1st August.

Mr. Y. Lefébure, Officer in charge Phytalus Destruction Savanne, relinquished his appointment on the 14th January and was replaced by Mr. J. Vinson on the 16th January.

Mr. G. Corbett, Provisional Tobacco Officer, returned from leave of absence on the 27th June.

Mr. F. Berchon, Scientific Assistant Chemical Division, returned from leave of absence on the 16th January.

Messrs. G. Bauristhène and P. Pilot were appointed Tobacco Inspectors on the 1st February.

ENTOMOLOGICAL DIVISION

The Entomologist reports as follows:—

Staff.—From February 5th to April 10th the Entomologist was absent from the Colony on leave. Mr. W. H. Edwards, Lecturer in Entomology, Agricultural College, acted as Entomologist. Mr. A. Moutia, Scientific Assistant, Entomological division, acted as Lecturer in Entomology and Mr. J. Vinson acted as Scientific Assistant in the Entomological Division.

Since July 5th up to the end of the year, the Entomologist having been appointed Director of the Department the same officers mentioned above acted as Entomologist, Lecturer in Entomology and Scientific Assistant respectively.

Campaign against Phytalus Smithi.—The number of beetles destroyed during the campaign 1927-28 has been 133,658,000 as compared with 118,240,800 during the preceding campaign. The larger number of beetles destroyed is ascribed to the steadily increasing extent of the foci of infestation. The number of larvæ destroyed during year amounted to 19,515,400. A leaflet on the biology of Phytalus, its parasites, natural enemies and on the methods to be adopted for the control of the pest, was printed and distributed to planters.

Experiments on the Control of Phytalus by means of Insecticides.—Numerous experiments and trials on extensive areas were made in the fields with various insecticides such as Cyanogas, Cianidra and Cianosor with a view of destroying Phytalus grubs in the soil and in certain cases encouraging results have been obtained. The results of these experiments have formed the subject of special reports submitted to the Phytalus Advisory Committee.

Breeding and distribution of useful Insects.—The prickly pear coccus, *Dactylopius Tomentosus*, which had been received from the Director of Agriculture of Ceylon in 1927, was bred in insectarium. It was found to destroy *Opuntia tuna* rapidly and when a fair number of individuals had been obtained they were systematically distributed to planters.

whose lands had been overgrown with prickly pear. Through the care of the Director of the Medical and Health Department and of the Director of Woods and Forests, the insect was liberated on Crown lands invaded by Cactus trees.

Tiphia paralella, the parasite of *Phytalus Smithi*, was distributed in all the localities where the pest exists and where the parasite had not established itself.

During the numerous inspections made on Estates by the Acting Entomologist, the attention of planters was called on the desirability of adopting cultural methods which would afford protection of the parasites and natural enemies of the insects damaging their crops. Full explanations were given, specially on the method of propagating the parasites of sugar cane borers, of the Tobacco Leaf miner, of the coconut Scale-Insect, etc.

The *Coccinellid*, *Vedalia chermesina* which lives as a predator on *Icerya Seychellarum* and destroys that Mealy Bug in large numbers was bred in the laboratory and forwarded to the planters of Coco Islands where the pest was reported to cause serious damage to various cultivated trees.

Insect Pests. Tobacco Leaf miner (Phthorimaea operculella Zeller).—This insect was prevalent during the months of August to October and caused a certain amount of injury to certain plantations of the Island. Instructions have been given to planters and the pest was adequately treated. A Bulletin has been prepared on the Life History of the insect and of the mode of treatment to be applied in case of outbreak. This Bulletin is underprint and will be distributed shortly to planters.

(2) *Mole-Cricket (Gryllotalpa mauritiana)* caused an appreciable amount of damage in the seed-beds of a Tobacco plantation situated at G.R.N.W. Advice was given to planters as regards the control of that insect which in all cases was soon destroyed.

Coconut and palms Aspidiotus destructor, *Sign* was again observed as affecting seriously this plant in some localities: Mahebourg, Belle-Mare, Pointe aux Sables, Bain des Dames, Rivière Noire. Notices have been served on owners when the remedial measures advocated have been promptly applied by the planters concerned and the pest has been kept in check. The Chrysomelid beetle, *Xiphispa limbata*, Waterhouse was again noticed damaging young palms. An article on the subject was published in the "Revue Agricole".

Onion.—Serious outbreaks of the Onion Thrips, *Thrips tabaci*, *Lindeman* were noticed in June, July and August in plantations of Flacq and of Old Grand Port where the crop is grown over extensive areas. Various insecticides such as Tobacco decoction, Petrol Emulsion, Rosin Wash, Colloidal Sulphur, were experimented with for the control of the pest. A series of demonstrations were made various in localities to teach the small planters the methods to be employed to control this pest. A leaflet on the biology of the insect and on the methods of control is underprint and will be distributed amongst all concerned.

Sugar Cane.—An extensive survey was made throughout the various sugar Estates of the Island to determine the amount of damage done by the Pink Borer, *Sesamia vuteria*, Stoll and by the Spotted Borer, *Diatrea Sacchariphaga*. The results of the survey has been recorded in a report submitted to the Cane Disease Sub-Committee of the Technical Conference.

A small outbreak of *Rhizotrogus pallens*, Arrow was observed at Bel Ombre where the grubs had destroyed all the cane stools over an area of about 2 acres. Application of Cyanogas was made over the infested plot and the destruction of the insect was completed by ploughing.

Chionaspis tegalensis was again observed on the coastal belt infesting several fields of sugar cane, DK 74, M 55 and M 131 being the varieties more susceptible to the attack of the insect.

Miscellaneous Pests.—*Icerya seychellarum*, Westwood was specially abundant during this year. Advice was given to planters as regards to the protection of its natural enemies.

Elachista sp (Lepidoptera Tineidæ) was observed on sweet potato, the larvae damaging the leaves to a certain extent in some localities.

Macrosiphum picridis (Rhynchota, Aphididæ) was recorded on Artichoke in September October and *Aphis tavaresi* on Citrus trees. *Cosmopolites sordidus* caused some injury to banana plants. *Red Spiders (Tetranychus sp)* were noticed on various plants. *Red Ants (Solenopsis geminata)* attached seed beds, being specially troublesome in tobacco nurseries. Applications of Cyanogas was generally advised and gave very satisfactory results. The lawn cut-worm (*Crambus seychellelus*, *Fletcher*) was observed damaging lawns in many localities. Various insecticides and poison baits were tried to destroy the caterpillars. A solution of Cyanogas at 2/1000 watered on the lawns gave the best results.

Other pests of little importance were as in previous years observed causing some damage to certain minor crops. In those cases as for the more important ones the necessary advice was given or insecticides and sprayers lent to those concerned.

Research Work. The life histories of the following insects were studied:

1. *Tiphia paralella* and *Elis thoracica* as parasiting *Phytalus* grubs.
2. *Dactylopius tomentosus* living on *Opuntia tuna* under local conditions.
3. *Phthorimaea operculella* attacking tobacco and of three of its parasites. Two Ichneumonids and one Braconid.

4. The Sugar Cane Tineid *Alucita sacchariphaga*, Bojer
5. The Onion Thrips, *Thrips tabaci*, Lind.
6. *Pulvinaria gasteralpha* attacking sugar cane.

A series of experiments were undertaken to investigate the mode of transmission of surra amongst cattle in this Colony. As a result *Stomoxys Nigra* was found to act as a mechanical vector.

Experiments were conducted with various insecticides, such as Cyanogas, Cianidra, Cyanosor, Lævosol, Lime sulphur, etc., against various insects such as the Melolonthids grubs attacking sugar cane, against household pests such as cockroaches; ants, termites, scale-insects and many other insect pests of field and garden.

Diseases of Poultry and Farmyard Animals. Investigations were continued on diseases attacking small farm animals. A considerable number of dead and diseased animals were examined; in all cases advices *ad hoc* were given to the breeders concerned. It had been noticed that such advices have led breeders to adopt more scientific treatment of their stock.

Examination of Plants and Fruits. Officers of the Entomological Division made a large number of inspections in connection with the importation of fruit plants, cuttings, tubers and other live plants.

Several thousands of cane cuttings intended for exportation to Reunion, Madagascar, Kenya, etc., were examined for diseases and insect pests by the Officers of this Division.

Consignments of manure from Rodrigues were examined with a view to study the possibility of allowing imports of manure from this dependency to Mauritius. As a result the proclamation governing the importation of manure into Mauritius is being amended.

Consignments of sand from Reunion for the Railway Department were sterilized under the direct control of the Acting Lecturer in Entomology.

Contribution of Officers of the Entomological Division Re-Cane Diseases Survey From August to December the Officers of this Division were in conjunction with those of the Botanical Division engaged in an extensive survey of cane fields all over the Island with a view of obtaining precise data respecting the incidence of various diseases affecting sugar cane chiefly gummosis, Leaf scald and Red Rot.

Education. At a meeting of the Chamber of Agriculture the Acting Director delivered a lecture on the prickly pear coccus, *Dactylopius tomentosus*.

A series of lectures illustrated by lantern slides and followed of demonstrations was delivered at Réduit by the Acting Entomologist to Estate Managers and Employees on the insect pests of sugar cane and on the methods of controlling these insects.

At the request of the planters of the North of the Island a second series of lectures on the same subject was delivered by the same officer at "Mon Plaisir" for those who had not been in a position to attend the Lectures at Réduit.

A series of lectures on Nature Study was delivered by the Ag. Lecturer in Entomology to students of the Training College. During the College of Agriculture's vacations, the same officer delivered lectures on economic entomology to Junior Officers of the Agricultural and Veterinary Divisions of this Department. These lectures were followed by demonstrations and laboratory work.

Publications.—A Bulletin by Mr. D. d'Emmerez de Charmoy on Poultry rearing in Mauritius and on the breeding of small farm animals was published. A Bulletin on the Tobacco Leaf Miner (*Phthorimaea operculella*, Zell) has been prepared by Mr. W. H. Edwards and is underprint. A study by Mr. A. Moutia on surra in Mauritius and on the role played *Stomoxys Nigra* as a vector of the disease was published in the Bulletin on the Entomological Research and is being reprinted as a Bulletin of this Department.

A Leaflet by Mr. W. H. Edwards on *Phytalus Smithi* has been published. A Leaflet on Onion Thrips (*Thrips tabaci*, Lindeman) has been prepared by Mr. J. Vinson and is underprint.

Coloured wall charts illustrating the nature of damages caused by insects attacking sugar cane have been prepared by Miss Edwards and are underprint.

The officers of the Entomological Division contributed to the *Revue Agricole* for many articles dealing with insect pests and farm yard animals.

CHEMICAL DIVISION

The chemist reports as follows:—

I. *Staff.*—(a) The lecturer in chemistry Mr. N. Craig proceeded to England on 10 months leave of absence in June, Mr. R. Lincoln was appointed to act as Chemist at the Department of Agriculture and Lecturer in Chemistry at the College of Agriculture.

(b) The provisional appointment of Mr. R. Lincoln as Assistant Chemist was made permanent in November.

(c) Mr. N. Rivalland was appointed temporarily as Scientific Assistant.

(d) Mr. P. Halais was appointed specially to make a series of mechanical analyses.

II. Work done for other Government Departments

(a) Samples of coal were sent by the Railway Department, the calorific value as well as the percentage of ash and the sulphur content were generally determined.

(b) A considerable amount of work was done for the Public Works Department a series of mechanical analyses of soils of Pamplemousses and Rivière du Rempart districts were performed; the object was to determine the nature of the soil texture.

III. *Investigational Work.*

(a) AVAILABILITY OF POTASH IN THE SOIL.—According to these experiments, when potash salts are applied to the lateritic soils encountered in Mauritius there is a gradual increase in the amount of non available or non exchangeable potassium oxide. When equivalent applications of potassium sulphate and potassium nitrate are made, the increase is greater with the former than with the latter.

The availability of the potash in molasses was also tested.

When molasses is applied to the soil, there is a decrease in the amount of non available or non exchangeable potash showing that the potash in the molasses has remained in these forms. The decrease is due to the conversion of the non available forms pre existing in the soil into available form.

In the presence of molasses, the potash applied in fertilisers does not revert to an unavailable form, while the potash pre-existing in the soil tends to become more available. The figures obtained by Dyer's and Hissink's method show a fairly close agreement.

(b) MINERAL CONTENT OF PASTURES.—A series of analyses were performed to determine the mineral content of different pastures of the island, samples from Rodrigues Island have also been analysed, the object of these investigations is to determine if the ashes of the grasses found on these pastures contain a sufficient amount of lime, potash and phosphoric acid. The importance of ashes in stock foods has been emphasized during last decade regarding its great influence in the welfare of stock. It is hoped to publish these results shortly.

(c) MECHANICAL ANALYSIS OF SOILS.—The new pipette method recommended by the "Agricultural Education Association" has been introduced definitely in the routine of the laboratory. Adequate modifications have been applied to obtain an efficient dispersion of the clay portion in spite of the highly ferruginous nature of soils in the Colony.

(d) RICE ANALYSIS.—A complete range of rices imported into Mauritius were analysed out of hundred samples received twenty five have been analysed such analysis comprising determinations of nitrogen, phosphoric acid, ashes and moisture.

(e) SOIL SURVEY.—So as to cover the whole area of the Northern districts, samples were systematically taken and mechanical analyses carried out thereon.

(f) ACIDITY OF SOILS.—The hydrogen ion concentration was determined on many of the samples of soils which were taken for the soil survey of the Northern districts. These determinations may be of a great practical agricultural value if the method devised by Arrhenius for the Java cane planters is adopted here.

(g) THE UBA MAROT SUGAR CANE.—Weekly analyses were carried on samples of this cane from both manured and unmanured plots to continue the experiments started last year. These weekly analyses were performed from the beginning of September.

Its sucrose content is still very low. The manured cane just as last year was as a rule richer than the unmanured cane and the purity a little higher.

(h) ADVISORY WORK.—The advice of the chemist was sought from time to time in relation to questions regarding different topics:

- (i) Manuring
- (ii) Alce Water
- (iii) Fertilizers
- (iv) Soil acidity etc., etc.

IV.—*Routine Analyses*

The routine work of the Chemical Division was less during the year under review than in the preceding year.

	<i>Samples received</i>			<i>Examinations</i>	
Guano melange	29	...	130
Lime	21	...	21
Dipping Solution	43	...	57
Phosphatic Manures	9	...	14
Fumier	14	...	40
Soil	5	...	25
Coal	6	...	13
Miscellaneous	55	...	82
			<hr/> 182		<hr/> 382

In addition to the above the following routine work was done in connection with the work of the Department.

	Number of samples		Estimations	
Cane Juices	204	...	408	
Rice	26	...	130	
Milk	38	...	144	
Ph. Determinations ... ..	...	...	...
	268		682	

The number of samples of cane juices viewed for analysis were not so large as in the preceding year due to the fact that all the samples from Pamplemousses Experiment Station were analysed on the spot by the officer in charge.

V.—Publications.

(a) A paper on "The availability of Potash in Soils" was sent to the Editor of the Journal of Agricultural Science and is going to be published.

(b) A paper on "the availability of Phosphates" was also sent to the Editor of the above mentioned review and was also accepted but requested few revisions.

VI.—Education.

The usual duties in relation to teaching at the Mauritius Agricultural College were performed by the Acting Chemist and the Acting Assistant Chemist who delivered lectures during the leave of the Lecturer in Chemistry. These duties consisted of the delivering of two lectures and the supervising of two laboratory periods weekly in each class.

In addition the Acting Chemist delivered lectures on Economics and Forestry to one class.

The Acting Chemist during three months delivered every Saturday a series of lectures on Nature Study to Government Monitors.

VII.—Examinations.

The Acting Chemist was appointed Presiding Sub Examiner for the University of London Examination Intermediate in Science July 1928.

The Acting Chemist acts as Examiner for the following examinations :

- (a) Registration of Agricultural Chemists
- (b) Monitor's Examination in Nature Study

VIII.—Miscellaneous.

The Lecturer in Chemistry and Assistant Chemist act as members and the latter as honorary secretary of the Sub Committee dealing with "Fuels Boilers and Furnaces."

The Assistant Chemist acts as honorary assistant secretary of the Mauritius Technical Conference 1928.

BOTANICAL DIVISION

The Botanist reports as follows :—

The work during the year under review consisted of investigations on diseases of sugar cane and other crop plants and forest trees, including inspections of plantations and forest areas and laboratory and field experiments, advice to planters with regard to the control of certain diseases, miscellaneous duties and lecturing and supervision of laboratory work in the College of Agriculture. The staff undertaking the work of the Division consisted of the Botanist and Mycologist assisted by a Plant Inspector, and was increased occasionally by the temporary addition of the junior officers of the Agricultural and Entomological Divisions for special duties.

Sugar Cane Diseases

Leaf Scald.—Caused by *Bacterium sp.* During the year under review the existence of this disease in Mauritius was first recorded. It has undoubtedly existed in the island for many years, but had until the commencement of 1928 been confused with gummosis. The disease is widespread over the island and attacks chiefly the White Tanna and Striped Tanna canes. Other varieties are rarely affected. Leaf Scald results in losses in both the field and the factory. Experiments have been conducted which showed that a loss of from five to eleven per cent in the weight of the cane may occur and that the sucrose content of affected cane may be reduced by as much as sixteen per cent below that of healthy cane. The White Tanna cane's degree of tolerance, however, still permits of good yields being obtained under favourable weather and cultural conditions. The disease causes losses not only in standing cane, but seriously affects the germinating power of infected cuttings and the ratooning power of infected stools.

Gumming Disease or Gummosis, caused by *Bacterium vascularum*, is also widespread and like leaf scald results in losses in weight and sucrose content of standing cane, and seriously affects the germinating power of cuttings and ratooning power of stools. No varieties in the island are immune. White Tanna is widely infected, but the losses caused by gummosis are less than those occasioned by leaf scald. M 55 and M. 131, two other

varieties fairly extensively cultivated here, show generally heavy *leaf* infection of the disease with very little *stem* infection, which results in the heavier losses. M. 55 and M. 131, therefore, suffer comparatively little, as a rule, from the effects of the disease. D. K. 74 and R. P. 8, a Demerara seedling, which is just beginning to gain popularity amongst the planters, are also very resistant to this disease, as they are to leaf scald as well.

There are also many local seedlings, such as M. 2316 and M. 2716, which show resistance to both diseases.

A systematic survey of the island was conducted to determine the extent of spread of these two diseases and red rot on the four varieties, White Tanna, D. K. 74, M. 55, and M. 131. This survey was conducted on practically the same lines as in 1927, that is, by determining the percentage of infected canes in a total taken at random from the carriers of several estates, and in addition, the percentage of infected canes in as large a number of fields as possible with the staff available. The estates selected were evenly distributed over the island. Leaf infections alone, and leaf and stem infections of leaf scald and gumming were separately listed. Owing to the similarity in symptoms of the two diseases, leaf scald and gumming, especially at certain periods of their development, it was not always possible for the inspectors to separate them with any accuracy. They have therefore been listed together.

The results of these surveys are tabulated in Appendices IV and V.

It will be noticed that the percentage of White Tanna canes at the carriers infected with leaf scald and gumming is slightly less in 1928 than in 1927. The diseases were not as large factors in crop reduction during 1928 as they were in 1927 also presumably on account of the much more favourable weather conditions during 1928 and the fact that the percentage of infection on each of the other three varieties was less in 1928 than 1927. The difference is pronounced in the case of M. 55, which was infected to the extent of 11.5% in 1927 and only 6.4% in 1928.

The figures obtained in the field survey vary from those obtained in the carrier survey because the canes examined in the latter were derived from more widely separated sources, and the figures obtained are thus more reliable as an indication of the extent of spread of the diseases in the island as a whole than are the figures in the field survey. The latter, however, are valuable chiefly as an indication of the relationship between leaf and stem infection, and show that a high percentage of leaf infection in a field, (and this applies specially to gummosis), may result only in comparatively negligible losses, as stem infection may even under such conditions be almost entirely or entirely absent.

With the assistance of the Officer in charge of Phytalus destruction for Pamplemousses, a survey of the seedling canes under trial at the Pamplemousses Experiment Station was conducted to determine the prevalence of disease amongst them. As a result of this survey many seedlings were found very susceptible to gumming and noted for eradication.

During the year articles were written by the Botanist and Mycologist and published in the "Revue Agricole" explaining the nature of leaf scald and gumming and the methods of control. The measures recommended are selection of healthy planting material, establishing nurseries with specially selected cuttings to supply planting material for estates, and the gradual replacement of the White Tanna by a more resistant variety, such as R.P. 8 and other seedlings, local or imported.

An article on a method of establishing nurseries for the supply of healthy cuttings was written by the Plant Inspector for publication in "La Revue Agricole."

With the idea of obtaining another method of control against leaf scald and gumming a plot experiment was laid out to test the effect of treating cuttings with hot water before planting. Preliminary experiments in boxes had demonstrated that in the great majority of cases immersion of cuttings in water of 60°C. for 15 minutes kills the eye buds. In the plot experiment three lots of White Tanna cuttings, (a) healthy, (b) affected with leaf scald and (c) affected with gumming, were each immersed, some in water at 50°C. for one hour and others in water at 55°C. for $\frac{1}{2}$ hour before planting. Other lots of cuttings, (a) healthy, (b) affected with leaf scald, and (c) affected with gumming, were planted without treatment. The resulting shoots are not yet sufficiently advanced to permit of conclusions being drawn as to the effect of the treatment on either of the two diseases, but the treatment at 50°C. for one hour stimulated germination in most cases. Healthy and *Leaf Scald* affected White Tanna cuttings both withstood the treatment at 55°C. and showed a high percentage of germination, but the germination and the early growth of the resulting shoots were not as rapid as in the case of cuttings heated at 50°C.

Gumming affected cuttings, on the other hand, heated at 55°C. for $\frac{1}{2}$ hour showed a low percentage of germination, many having been destroyed by the treatment.

The ability of cane cuttings to withstand a temperature of 55°C. for $\frac{1}{2}$ hour seems to depend upon the variety, whether or not the cuttings are diseased, and the type of disease with which they may be affected. Results obtained from experiments on hot water treatment of cuttings are not yet conclusive enough to warrant the recommending of it as a general practice amongst planters, and the risk of loosing many cuttings through the accidental rise in temperature of water above the thermal death point of the cuttings, when the treatment is being done on a large scale, is great.

Red Rot.—Caused by *Colletotrichum falcatum*. The extent of spread of this disease is shown in the table in Appendix V. As pointed out in the 1927 report, D.K. 74 is the

variety most susceptible to this disease. There was also a serious outbreak in a field of R. P. 6 canes on an estate in Plaines Wilhems. White Tanna is resistant. The amount of red rot infection in the island as a whole was less than in 1927, but in certain areas of the coastal region losses from red rot in D.K. 74 fields were quite as severe as, if not more severe than, they were in 1927.

Pine apple Disease caused by *Thielaviopsis paradoxa*, still caused losses through failure of cuttings to germinate or stunting of young shoots in regions where and at times when dry weather conditions prevail, and when control measures advocated are not applied or are done in an inefficient manner.

Smut.—Caused by *Ustilago scitamineae* is still almost entirely confined to the drier regions of the Island.

Streak was rarely encountered during the year. It is still confined to the R.P. 8 variety, on which it causes negligible losses.

Root disease complex was reported from widely separated areas in the island. Its exact cause is still obscure, but the condition still seems to be secondary to soil and other environmental factors. A type of disease, in which nearly mature canes wilt and die rapidly, and which is at present included under the heading of the root disease complex, seems to be parasitic in its origin. Investigations are in progress to determine the parasite, if any.

Pokkah bong.—The condition known as pokkah-bong in Java and other cane-growing countries of the East, was recorded during the year. The condition in some rare cases seems to be associated with a heart rot or a top rot. Losses from this disease are very small.

The Botanist and the Plant Inspector wrote articles on this subject, which were published in "La Revue Agricole".

Heavy attacks of *Helminthosporium* on the leaves of White Tanna, causing the eye spot disease, were observed on a few estates during the wet season of April.

A rather severe attack of *Striga hirsuta* (herbe feu) was encountered on one estate and measures for its control recommended.

Stem deterioration.—The condition known by this name was widespread, chiefly on White and Striped Tanna canes. It is manifested by a dry, white pithy deterioration in the centre of the stem, which later turns red to reddish-brown with yellow patches on either side of the affected centre. Later the centre of the stem is hollowed out. The condition is not regarded at present as being parasitic in its origin. Bacteria have been isolated from affected tissues, but they were not proved to be parasitic.

Experiments are being conducted to determine whether or not the condition is transmitted to a succeeding crop in affected cuttings.

Diseases on Plants other than Sugar Cane

Tobacco.—Mosaic disease, as in previous years, was commonly found. The practice of "roguing" diseased plants in young plantations seems to check the spread of the disease.

Experiments on soil and insect transmission of the virus of tobacco mosaic were conducted by the Entomological Division. These results were published in "La Revue Agricole" in an article by the Scientific Assistant, Entomological Division.

A serious outbreak of *Frenching* was observed in a plantation near Terre Rouge. This disease has not been found to be infectious, and is probably due to a nutritional factor.

Several cases of *mildew* (*Oidium* sp.) were observed.

A few outbreaks of *Granville wilt* (*Bact. solanacearum*) were encountered, but they were not serious in extent.

Specimens of what appeared to be "House burn" on flue cured tobacco leaf were submitted by the Tobacco Officer. It was probably caused by an excess of moisture in the barn.

Filao (*Casuarina equisetifolia*).—The affection, reported in the annual report for 1927, characterised by a peeling of the bark high up on the main stems, was observed during the year, but lack of time prevented work on its etiology being carried out. The disease has not appeared to spread during 1928.

The experimental plots at Les Bouchons, in connection with the so-called "smut" disease, were kept under observation. The disease has not spread from the affected area to trees separated from this area by trenches, but it shows signs of spreading to an adjoining area between which and the first affected area there is no trench. All affected trees were noticed for the first time to show a splitting and subsequent peeling of the bark of the main stems at or near the ground level. Investigations are in progress to determine the etiology of the disease.

Coconut.—A few cases of "bitten leaf" disease, caused by *Thielaviopsis paradoxa*, were reported. In some instances the disease appeared to be followed by a bud rot.

Royal Palm (*Roystonea regia*).—A rather severe outbreak of a "bud rot" was observed in the vicinity of Grand River North West. The symptoms of the disease suggested the direct attack of a parasite on the "heart" of the trees through the outer overlapping leaf sheaths. Various organisms, including *Thielaviopsis paradoxa*, have been isolated from freshly diseased tissues, and inoculation experiments are in progress.

Terminalia arduana.—There were outbreaks of root disease, apparently caused by a Basidiomycetous soil fungus, resulting in the death of the trees, in the river reserve near Trianon, and at the base of Corps de Garde Mountain. Specimens were submitted to the Director, Imperial Bureau of Mycology, who replied that the causal fungus was apparently *Armillaria mellea*. Measures of control were recommended to the Director of Forests.

Other Diseases recorded are as follows :—

- × Mosaic disease on Cucurbitaceæ, tomato and *Capsicum annuum*.
Mosaic-like symptoms on *Cassia occidentalis* and another species of *Cassia* and *hytarpetha indica*.
 - × Smut on *Panicum maximum*, *Stenotaphrum complanatum*, and *Fimbristylis monostachya*.
 - × Ergot, *Claviceps paspali*, on *Paspalum dilatatum*.
Bacterial Wilt of tomatoes, probably caused by *Bact. solanacearum*.
Phytophthora of tomatoes.
Symptoms suggesting leaf roll of potato.
Blight of potatoes, caused by *Phytophthora infestans*, was less pronounced than in previous years.
 - × Black-rot of cabbage and cauliflower, caused by *Pseudomonas campestris*.
 - × Leaf spotting and stem rotting of peas, caused by *Ascochyta pisi*.
 - × Blight of carrot, associated with *Cercospora* sp. This was controlled at the Central Experiment Station by spraying with Burgundy mixture.
 - Collar rot of citrus trees in Rodrigues. Etiology is being worked out. Probably bacterial in its origin.
- Most, if not all, of the cases of the so-called *streak* disease of maize seem to be in reality the *corn stripe* disease, described by C. F. Stahl in Cuba.

MISCELLANEOUS DUTIES

These comprised :—

(1) Work in connection with the receipt and planting out in quarantine greenhouses of sugar cane cuttings imported from Java, and the subsequent care of the resulting plants. The quarantine greenhouses were placed under the charge of the Botanist and Mycologist.

(2) Supervision of inspection of imported and exported plants. Sixty-four certificates of inspection of imported plants and twenty certificates of inspection of exported plants were issued during the year.

(3) Supervision of London University Examinations. The Botanist and Mycologist acted as Assistant Director of Agriculture, in addition to his other duties, from July to December.

He delivered three lectures and supervised two laboratory periods per week in Botany and Mycology at the College of Agriculture.

VETERINARY DIVISION

The Government Veterinary Surgeon reports as follows :—

Importation of Animals.—During the year the number of animals imported into the Colony after examination were of 14,279.

Foreign places	... 1,148
Madagascar	... 7,876
Dependencies	... 5,255

Animal Quarantine Station.—One Charollais Bull imported from France for "La Société des Eleveurs" was placed under one month's observation at Fort William Animal Quarantine Station. Thirty-four Friesland heifers, the property of Government, were also in observation for a similar period. These animals have subsequently been delivered to their respective owners. Fourteen dogs and bitches were placed under 6 months' observation in the Government kennels.

CONTAGIOUS DISEASES

Surra.—The number of smears examined was of 9,675 and 79 cases of Surra detected amongst which 1 horse, two ponies and one donkey which were immediately slaughtered. Affected bovines were treated with Soamin and Arsenious acid.

Tuberculosis.—432 cows have been tested for Tuberculosis during the year.

		Positive Reaction
No. of animals tested	Breeding herd	12
	Milch cows	2

Affected animals have been slaughtered by their respective owners. The prophylactic measures against this disease is being continued and 422 young calves and heifers have been inoculated with B.C.G. vaccine.

Epizootic Lymphangitis.—5 cases of this disease have been detected on horses, 4 were treated and subsequently cured, one horse was destroyed being incurable.

REPORT OF DEATH

293 deaths were reported by the Police to this Department. In two cases, owners were prosecuted and fined for not having reported the death of their animals.

MEAT INSPECTION

Seizure of 2 tubercular carcasses at Rose Belle and Rose Hill abattoirs were maintained. About 25 farrow cows and heifers under age have been allowed to be slaughtered. A carcass was seized at Camp de Misque Pave for slaughtering outside abattoir.

CASES OF CRUELTY

About 90 animals have been examined at the request of the Police Department for cruelty on animals. On two occasions postmortem and tests re-poisoning of dogs have been carried out.

GOVERNMENT ANIMALS

Weekly visits were paid to animals of the different Departments and several treated for the following affections:—

Police Department.—3 horses for lameness, two for accidental wounds, 2 for colics, one for lymphangitis and 2 for punctured hoofs by nails.

Woods and Forests Department.—One bullock died of colics, another was destroyed for Tuberculosis, one attended to for a broken horn and 2 castrated.

Medical and Health Department.—(Central Station) Three mules attended to for lameness and another one for frog rot.

Curepipe Sanitation.—Four bullocks for limping, one for pneumonia, one for colics and two for accidental wounds.

Candos Hospital.—One donkey died of colics and one treated for swelling of the abdomen

Immigration Department.—Two donkeys died of colics.

Government Dairy.—Two cows treated for abscesses and five for Surra.

Inspection of Rodrigues.—An inspection of animals of Rodrigues was made during the year. Progress is being made as regards breeding in that Dependency, and suggestions submitted. Two catalonian donkeys have been imported and sold to breeders.

STATISTICAL DIVISION

The Statistician reports as follows:—

Agricultural Statistics.—The Blue Book Statistics relative to Agriculture were supplied to Government. Statistical data were also supplied to the International Institute of Agriculture, Rome, to the Board of Trade, to the Colonial Secretary's Office; the Immigration Department etc., and to various interested bodies both here and abroad.

Quarterly reviews of local prices of certain essential articles together with index numbers were issued. Quarterly reviews of weather and crop conditions were supplied to Government while the usual forecasts of sugar productions were prepared for Government and various interested bodies.

The results of the field experiments conducted by the Department in relation to variety and manure tests were subjected to the usual statistical analysis.

Meteorological.—The meteorological service of the Department was continued on the same lines as heretofore. Observations of the temperature of air and of evaporation, of rainfall, and continuous record of air temperature are obtained at the Central Experiment Station, Reduit, while temperature of air and of evaporation and rainfall are obtained at four Secondary Stations, viz: Royal Botanical Garden, Pamplémousses; Abercrombie Nursery, Port Louis; Nursery Gardens, Curepipe; Barkly Experimental Station, Beau Bassin. In addition, most Sugar Estates contribute rainfall observations. Their data are reduced and coordinated to assist in the work of crop forecasting and for general agricultural questions connected with climatic factors. Summaries are published in Appendix 1 of the present report.

Educational.—The general management of the Agricultural College was carried on as usual, under the direction of the Principal, with the help of the College Clerk. Lectures in Physics were delivered once a week to First Year Students, in the College of Agriculture, each lecture being followed by laboratory practice. Lectures in Applied Mathematics were delivered to the same students, once a week.

Research Work.—During the year research was continued on the relation of the growth of the sugar cane and temperature and soil moisture. Two papers were prepared on the subject.

SUGAR TECHNOLOGICAL DIVISION

The Sugar Technologist reports as follows:—

Visits to Factories, Investigations, etc.—A new feature in the sugar industry of this Colony was the production of a certain amount of raw sugar for the British Market (about 50% of the total output).

At the request of their respective Managers the Sugar Technologist visited several factories in connection with that question. Advice was given, the important point being

the production of a sugar polarizing not over 99 because of the customs duties in England, and as near as possible to 99 because of the penalties imposed on by the buyers. Another important point is the moisture of the sugar: there is a relation between that element and the keeping qualities of the raw sugar.

In several factories sugar driers were installed with a view to reducing the moisture of the sugar to a minimum.

The study of these sugars necessitated a great deal of analytical work.

Other factories were visited as usual during the crop and advice given when sought for.

The Juice was particularly good all over the Island and the manufacture of sugar easy. Recovery was more satisfactory than usual.

Preliminary work was done by the Assistant Sugar Technologist for the control of the production of steam in factories.

The use of water cooled crystallisers has generalised in almost every factory, with satisfactory results.

Contrôle Mutuel.—Thirty six out of the 142 factories contributed to the "Contrôle Mutuel" and fortnightly returns were regularly distributed amongst contributors. As last year the names of a certain number of factories were given. We are sorry to note that by the end of the crop, returns are not sent in by the Chemists as regularly as at the beginning. This reduces the interest of the returns.

Educational.—Full courses of lectures were delivered by the Sugar Technologist and the Assistant Sugar Technologist to the 2nd and 3rd year students of the College of Agriculture in Sugar Technology, Sugar House Chemistry, Cultivation of the Sugar Cane, Mechanical Engineering, Building Construction and Surveying. Practical laboratory work was also performed as well as practice in mechanical engineering.

The Students visited sugar factories, engineering workshops, etc., with the Sugar Technologist and the Assistant Sugar Technologist.

Miscellaneous.—Articles were written by the Sugar Technologist and the Assistant Sugar Technologist for publication in the *Revue Agricole*.

The Sugar Technologist was selected by the Sugar Industry Reserve Fund Committee as delegate for the study of the Suchar Process of refining sugar. He proceeded to South Africa, on study leave in this connection and was absent from October 20th to December 12th. Reports were presented to Government and to the Chamber of Agriculture.

Mr. de Revel, Assistant Director of the Raffinerie St. Louis (France), visited the Colony in August to gather information on the Sugar Industry of the Island. Mr. J. N. Sarkar, B.A., B.Sc., etc. co-manager of the Firm Sarkar, Gupta & Co., Limited, of Calcutta, spent some months investigating on the application of electric chlorine (a patent disinfectant for sugar factories, prepared by his firm) in sugar houses. Messrs R.G. W. Farnell and G. H. Farrington, both of the British Suchar Processes Limited, spent a fortnight in the Island in October. The Sugar Technologist helped these technical men in their investigations and proceeded on visits to factories with them. Mr. Sarkar and Mr. Farnell did some laboratory work in the Sugar Technological Division of this Department.

GOVERNMENT DAIRY

The Officer in charge Dairy reports as follows:—

Yield of Milk.—61,622 litres of milk were produced during the year by the herd numbering 38 adult cows. The average yield per cow was therefore about 1,625 litres.

Milk was disposed of as follows:—

Supplied to Government Institutions	... 31,868 litres
do. the Public	... 18,115 "
Fed to calves	... 11,043 "
Samples for Control	... 507 "

Individual yields are shown in Appendix II.

Births.—19 births were recorded, comprising 10 males and 9 females.

Deaths.—One calf died from pneumonia. Two deaths occurred on cows, one from congestion of the lungs and the other from Surra.

Surra.—This disease was detected on cows in June and 7 animals were actually affected. Quarantine regulations were immediately enforced and the complete soamin treatment was applied on the seven affected cows while all other animals of the Dairy received arsenic either by injection of soamin or arsenious acid boli. Infected animals were quarantined in an isolated fly proof stable which was only opened before sunrise or after sunset. One infected cow died in August and although relapses occurred on five out of the six remaining cows, all of them were in very good condition at the end of the year. Trypanosomes are no more found in the blood of these animals yet they are being kept in strict quarantine until their blood will have been tested on dogs with negative results.

It should be remarked that animals, which had repeatedly relapsed after treatment with soamin and arsenious acid, received injections of Bayer 205 and Tartar Emetic with the result that trypanosomes were not found in their blood on examination of smears.

Abortion.—Nine cases of abortion were recorded and in spite of researches the cause of abortion has not yet been detected. This coupled with the fact that a large number of cows retained their placenta after calving, resulted in severe losses for the Dairy and is receiving serious attention.

Sales.—Three cows were discarded during the year and sold to the butcher. 18 calves were sold to breeders and it is gratifying to remark that calves from the Dairy are in steady demand.

Enlargements.—The Secretary of State having approved of the recommendations of the Dairy Enquiring Committee, the erection of additional stables was started in June and were on the point of being completed at the end of the year. The main additions comprise : one stable 68 feet by 32 feet to receive 34 cows stalled in two rows, and two calving stables 19½ × 16½ feet with two stalls each.

Thirty four high grade Friesland cows were imported from South Africa with the kind assistance of the South African Friesland Cattle Breeders' Association. They were landed in good condition in October and kept in quarantine at Fort William. They will be removed to Curepipe as soon as the stable fittings ordered from England have been received and installed in the newly erected stable intended for them.

TOBACCO DIVISION

The Tobacco Officer reports as follows :—

The Tobacco Officer returned from leave and resumed duty in June and the Agricultural Superintendent who had been in charge of the division during the absence on leave of the Tobacco Officer, reverted to normal duties.

The staff was increased by the appointment of Mr. R. Pilot as Tobacco Inspector under Ordinance 6 of 1928 and Proclamation 51 of 1927.

During the year an Ordinance to make provision for the registration of all tobacco growers and for the payment of a fee of R.1 per acre was passed. This Ordinance has been of considerable value and it is now possible to arrive at correct figures as to the acreage planted.

An excise tax was levied on all manufactured tobacco of Rs 1 per kilo and this has enabled correct figures as to local leaf manufactured to be obtained.

During the first few months of the year large stocks of leaf were on the market which resulted in a slump in prices and large quantities of leaf were lost. The quality produced was inclined to be chiefly low grade and unsuitable for export. Two experimental shipments were made details of which are given later. The effect of this large crop was to curtail production and this combined with poor crops during the winter months led to better prices.

Gold leaf which was freely planted by growers during the winter months failed in a large number of cases, this failure being due to a large number of cruses.

Towards the end of the year better crops and better quality leaf were being produced and there was an increase in acreage. A number of new varieties were also being tried by planters some of which appear most promising, notably Hickory Pryor.

The acreage registered during the year was 1597 acres and was distributed as follows :—

Flacq	...	...	693	acres
Rivière du Rempart	...	...	294	"
Black River	...	...	272	"
Pamplemousses	...	...	157	"
Port Louis	...	...	31	"
Plaines Wilhems	...	...	83	"
Moka	...	...	54	"
Grand Port	...	...	5	"
Savanne	...	...	9	"

Total ... 1597 acres

The total production for the year of all grade leaf is estimated at 310,000 kilos of which 298,000 was bought by local manufacturers during the year. This gives an average yield of Ks. 194.114 for the acreage registered.

The number of flue curing barns increased during the year there now being 81 in operation in the Island, although the majority of leaf produced is still air cured.

A special Committee was appointed by His Excellency the Governor to enquire into the difficulties experienced and to recommend measures for remedying the same. The Tobacco Officer served as a member of the committee and also as Secretary, and the committee rendered its report in December.

On the experimental stations variety trials were carried out, results however of the experiments conducted at Barkly Experimental Station are not available as such a large number of plants were retained for seed. At the Botanic Gardens Pamplemousses the variety Joiner gave quite good results, a yield of 517.8. Ks per acre being obtained. This variety is better for air curing than flue curing.

A new experimental station was opened on land placed at the disposal of the Department by Mr. Hugnin at Mont Roches, and work of clearing was almost completed by the end of

the year. The chief experiments to be carried out are variety trials in the first place and the following varieties are being utilised: Blue Pryor, Yellow Pryor, Hickory Pryor, Constant, Gold Leaf and Blue.

Further experiments were commenced at the Botanic Gardens, and the varieties Joiner and Hickory Pryor were planted, but owing to very dry weather conditions the variety Hickory Pryor failed and preparations were made for replanting with Yellow and Blue Pryor.

The divisional officers have maintained close touch with the growers and 4248 visits have been made during the year.

Inspectional services under Proclamation 51 of 1927 have been fully maintained and 441 notices were served on growers for removal of mosaic diseased plants and ratoons. Invariably such notices met with a ready response from the growers and it was only necessary to prosecute in 25 cases, and in 11 cases for failing to register plantations.

During the early months of the year quantities of leaf were received at the Warehouse for export, a total of Ks. 44,057.5 were received but only 12992 Ks. were shipped, the remainder was either sold locally or returned to growers.

Advances were granted to growers on the tobacco shipped and these advances totalled the sum of Rs. 8308.58 cs.

Owing to a glut of leaf on the English market sales in London have been slow and up to the present only 9 bales have been disposed of.

Mosaic disease has not been so marked during the past year, the enforced roguing of diseased plants appears to control the disease to a certain extent.

Granville Wilt has been noted in a number of plantations chiefly in the Flacq district but has not occurred as a serious menace.

Frenching was discovered in a plantation at Terre Rouge the majority of plants being affected but in some cases appeared to grow out of it.

Samples of leaf were supplied for the Ideal Home Exhibition and the Industries Fair in London.

AGRICULTURAL AND EXPERIMENT STATION DIVISION

The Chief Agricultural Officer and the Assistant Agricultural Superintendent report as follows:—

EXPERIMENT STATIONS

Experiment with canes.—A great extension was given to the propagation of the most promising cane varieties. New cane nurseries were established under the control of the Department at Mon Rocher, Bonne Mère, Circonstance and St. Aubin with the object of ascertaining which varieties do best in different districts of the island, to propagate them and distribute to planters.

A new plot of land about one and a half acre was cleared at the Central Experiment Station Réduit to grow selected canes.

Other cane varietal plots were also made on the following Estates viz. Labourdonnais, Beau Vallon, Riche Fund, Sans Souci and Beau Plan.

Considerable interest was taken by planters in following the cane experiments at Réduit and Pamplémousses. Many visits were paid to the Nurseries by Managers of Estates and other planters; every effort was made by officers of the Department to explain and interest the visitors in the important work of cane selection and propagation.

A special Field Day was held on the 17th of May at Mon Plaisir. About one hundred planters and other persons interested in the sugar industry attended the meeting; they were shown round the Experimental plots by the Director of Agriculture and his assistants. This meeting was a great success; the chief result being that the visitors impressed by the many promising varieties of canes they saw, sent in numerous applications for planting material; these were supplied without delay.

Selected canes were at first sold at 50 cents each during the intercrop, the price was afterwards reduced to 15 cents each during the crop. Canes for a total value of Rupees 1710.70 cs. were sold.

Most of the Estates in the Colony have now their own Nurseries where they grow and propagate the best varieties distributed to them.

The following varieties of canes were recommended to planters as being worthy of trial on a commercial scale viz:—

M. 1516; M. 2316; M. 2716; M. 1917; M. 3517; M. 1318; M. 1718; M. 3319; R. P. 6; R. P. 8; P.O.J. 213, and B. H. 10/12.

An interesting variety M. 522, a dark purple cane with long internodes was in great demand.

Cane seedlings were raised from varieties D.K. 74; 55; Uba; D. 109 & 131. One thousand young plants were selected and planted out in one hole trial at Mon Plaisir and in the new varietal plot of Mon Rocher.

From the 1927 seedlings, 231 varieties were propagated in six hole trial. A second selection of 19 varieties was made from the 1926 series.

A small plantation was made of several old varieties such as Port Mackay, Padilla, Louzior, Bambou, Bois Rouge, Tambiapen, Knox, Branchue and Cheribon etc. It is intended to use some of them as parent plants for breeding purposes in order to raise new good varieties.

Cuttings of P. O. J. 2878 were received from Java ; they have been planted in the quarantine Greenhouse where they are under observation.

Manurial and varietal experiments with canes were carried out on several Estates of the Colony.

The canes leftover after the distribution to planters were sent to factories. At Mon Plaisir 82 tons were sold to Beau Plan Estate and at the Central Experiment Station Réduit 132 tons were bought by Trianon Estate.

Central Experiment Station.—As in previous years, plantations of Yams, Eddoes, Tannias, Ground Nuts, Sweet Potatoes and leguminous plants used for green manuring were made. Seeds and cuttings of the above were distributed free to all persons applying for them ; many applications were received.

Barkly Experiment Station.—Many interesting additions were made in the orchard, the following were planted during the year :—

59 Peaches (grafted)	11 Diospyros kaki
24 Figs (new varieties)	10 Guavas (large fruited)
10 „ (local)	3 Eugenia malaccensis
5 Atemoya	4 Spondias purpurea
2 Cherimoya	2 „ „ dulcis
14 Casimiroa edulis	24 Mangoes (grafted)
25 Avocado pears	8 Jujubes (new varieties)
8 Bread Fruit	12 Apple Layers
6 Anona squamosa	4 Pears „
4 Chinese Letchis	6 Bibasses (new varieties)
6 Oranges (grafted)	6 Jaboticaba
6 Mandarines „	7 Morus Nigra
3 Grape fruits	20 Bananas (new varieties)
12 Pecan nut	6 Grape vines
2 Chinese Shaddock	6 Passiflora laurifolia

152 fruit plants and ornamental trees were sent to School Gardens and Government Institutions.

The following were sent to the Experimental Station at Rodrigues.

- 12 letchis layers
- 6 mango grafts
- 12 avocado pears
- 1 apple tree
- 44 fruit trees (mixed)
- 21 Araucaria Cunninghamii
- 35 Clove seedlings
- 100 grms Coix edulis seeds

Four kilos of seeds of leguminous plants were distributed free to planters.

Experimental plantations of Yams, Sweet Potatoes, Onions, Manioc, Ginger, Saffron and Tannias were made.

The boundaries of the Station were planted with Pithecolobium and also fenced with barbed wire.

The total sale of plants, seeds, etc. during the year amounted to Rupees 1493.95 cs.

A large number of plants were raised in the Nursery, these included different species of Coffee, Cloves, Cacao, Letchis, Mangoes, Peaches, Citrus and other fruit and ornamental plants. Owing to the large number of plants propagated, it was found necessary to enlarge the plant shed to twice its original size.

Seeds and plants of Avocado Pears, Peaches, Spondias lutea, Jaboticaba, Casimiroa edulis etc. were received from Mr. Gabriel Régnard.

Many persons visited this Station during the year either to buy seeds, plants etc. or to see the work in progress.

Stock Farm Réduit.—The following births were recorded :

- 1 pure bred Mysore bull calf
- 1 „ „ Hissar heifer „
- 2 „ „ Holstein Friesland bull calves
- 3 „ „ „ „ heifer „

One Charolais Bull and a cow belonging to the “Société des Eleveurs” were kept at the Stock Farm, the bull being sent for service on Estates from time to time.

Four Holstein Friesland heifers and two bull calves and one Ongole bull calf and one heifer were sold.

Ten Friesland Cows were transferred to the Curepipe Dairy.

13660 litres of milk were obtained and disposed of as follows :—

- 5239½ litres were supplied to Moka Hospital
- 5145½ „ „ „ Victoria „
- 3257½ „ „ „ sold to different buyers or fed to calves

One Ongole Bull and one Hissar Bull were sent for service to Union Vale, Beau Songe, St. Antoine and Belle Mare Estates.

Sixteen services by two Holstein-Friesland Bulls were recorded at the Stock Farm.

Poultry and Rabbitry.—One pen each of the following breeds was kept:—White Leghorn, Ancona, Black Minorca, Rhode Island Red, Speckled Sussex, Light Sussex, Wyandotte, and Australorp 1667 eggs were obtained.

Rabbits and Guinea pigs were also reared but with no progress; it was decided to sell them.

Farm School.—A Farm School for training pupils in Agriculture was inaugurated on the 19th of March. Fifteen pupils are being trained, they comprise a certain number selected after a competitive Entrance Examination, and former Horticultural apprentices admitted the previous year.

The work and conduct of the pupils were satisfactory.

At the "Société Horticole" show held on the 29th September, the Farm School obtained a Silver Medal for a collection of vegetables and a Bronze Medal for cut flowers.

Royal Botanical Gardens, Pamplémousses.—The work of improvement was continued in various sections of the grounds.

The kiosques were rethatched, the bridges repaired. All lawns were regularly mown and swept. The lakes, canals, avenues, paths and beds were kept in good condition.

A marble tablet was erected to commemorate the planting of two "*Araucaria Cunninghamii*" by Her Royal Highness the Duchess of York on her visit to the Gardens in 1927.

Over one hundred American tourists visited the gardens on the 9th of April; they were very pleased of their visit.

A present of a large tortoise was received from Mrs. Thompson, Quatre Bornes, this gift is much appreciated, as it is an interesting addition to the collection of tortoises in the enclosure at "Mon Plaisir."

210 Mango grafts and 157 letchis layers were made and forwarded to Abercrombie Nursery and Barkly Experiment Station.

Several picnics were held and many persons visited the gardens during the year.

Curepipe Gardens.—A great improvement was made in the old Rosery in front of the office. The plants composed chiefly of old and common varieties were uprooted. The plot of land was then properly layed out in rectangular beds, the space between the beds was planted with "*Paspalum*" grass. A collection of over one hundred varieties of budded roses was planted on the beds, the plants grew well and were much admired by visitors during the flowering season.

The hedges, lawns, flower beds, roads and paths were attended to throughout the year.

A large number of seedlings of Gloxinias, Amaryllis, Cyrtanthus Gladiolii, Dahlias etc. were raised.

Necessary repairs were done in the Greenhouse, also to the kiosques and bridges. An experimental plantation of solid camphor yielding trees was made on a plot of ground in the vicinity of the Gardens; a total number of 216 plants were planted; with the exception of a few plants which died and others which were stolen, the remainder are growing well.

Abercrombie Nursery.—A large number of plants were propagated.

The following is a list of plants supplied from the Nursery during the year:—

111 letchis layers	Mango seedlings	...	109
168 Mango grafts	Citrus	...	442
25 Citrus "	Miscellaneous	...	2889
711 Palms	Anonas (etc.)	...	18

Total ... 4473

The revenue derived from sale of plants and seeds amounted to Rs. 1705.93 cs.

Many plants were distributed free to Government Institutions.

A large number of Bougainvillea seedlings were raised in order to obtain new varieties.

The Coconut plantation in the vicinity of the Nursery was kept clean, vacancies were replaced where necessary.

Le Reduit Grounds.—The grounds were maintained in good condition. The flower beds were planted with a choice collection of annuals and other ornamental plants according to season.

Prizes were obtained at the Curepipe Horticultural Show for exhibits of cut flowers, vegetables and papaws.

A supply of fruits and vegetables was sent daily to Government House during the year.

Food Settlements.—The food settlements at St. Martin were as usual well planted with maize, manioc, vegetables, etc. during the rainy months. Only a few settlers having a water "prise" are able to grow foodstuff throughout the year. The plots were taken up and cultivated by shareholders of the local Co-operative Credit Society.

Co-operative Credit Societies.—The work of these societies is reviewed in a separate report.

Rodrigues.—Experiments are being made to start coconut plantations in different parts of the island. The vanilla plantation at Solitude gave good results. Trials of Teneriffe onions were also successful.

RODRIGUES

The Acting Agricultural Superintendent reports as follows:—

RAINFALL

Oyster Bay

	inches		inches
January	2.04	Brought Forward	22.53
February	5.32	July	5.68
March	5.57	August	3.37
April	4.22	September	1.07
May	3.53	October	.75
June	1.85	November	1.54
		December	.56
Carried Over	22.53		
		Total	35.50

There were during this period 180 rainy days. The highest rainfall occurring on the 19th March, being 3.21 inches. The rainfall was well distributed during the first 8 months but in the latter months very dry weather was experienced.

WORK IN THE EXPERIMENTAL STATION

Improvements.—A gate has been erected at the entrance of the Experimental Station. Plots E and G have been terraced. A new path has been created along the orchard.

Buildings.—The cattle shed and the sheep pen have been reconstructed. A new house, has been built for the man in charge of the Stock Farm. The different water reservoirs have been repaired.

A new sty and pig run has been started with.

EXPERIMENTS WITH DIFFERENT VARIETIES OF FOODSTUFF

Maize

Variety Red Flint

Sown December 1927. Reaped March 1928. Average yield per acre 1,936 lb.

Sown May 1928. Reaped September 1928. Average yield per acre 2,602 lb.

Variety White Flint.

Sown November 1927. Germination was bad. Only a few cobs obtained and kept for seeds.

Sown July 1928. Reaped November 1928. Average yield per acre 1,176.

MANIOC (MANIHOT UTILISSIMA)

Planted May 1927. Reaped June 1928.

Variety	Average yield per acre	Variety	Average yield per acre
Negrita 12 ...	6.880 lb.	Cassava Beureum ...	11.200 lb.
Smallings ...	3.680 "	Rodney ...	8.800 "
Cabesadura ...	9.600 "	Trinidad 3 ...	3.040 "
Constantin ...	3.680 "	No. 29 ...	8.160 "
Blue top ...	4.800 "	Federated Malay States ...	2.080 "
Bitter ...	4.800 "	Pacho 3 ...	2.400 "
Singapore ...	17.920 "	Paloma ...	6.560 "
Butter stick ...	4.480 "	Australie ...	6.240 "
Negrita 15 ...	5.760 "	Trinidad 2 ...	4.640 "
Blancite ...	5.760 "		

Planted September 1927. Reaped June 1928.

Variety	Average yield per acre
Smallings ...	3.680 lb.
Negrita 12 ...	4.652 "
Smallings ...	2.480 "

GINGER

Planted September 1927. Reaped July 1928.

Average yield per acre ... 2.915 lb.

SAFFRON

Planted September 1927. Reaped July 1928.

Average yield per acre ... 6.478 lb.

DIOSCOREA (YAM)

Planted November 1927. Reaped July 1928.

Variety	Average yield per acre	Variety	Average yield per acre
Light Red ...	24.288 lb.	Danish ...	12.672 lb
Bugle Horn ...	15.840 "	Cush ...	6.864 "
Crops ...	18.744 "	Oriental ...	24.288 "
Sealed top ...	20.856 "	Bottle neck ...	17.424 "
Lisbon ...	14.784 "	Horn ...	13.200 "

Planted November 1927. Reaped October 1928.

Variety	Average yield per acre
Cush-cush ...	15.752 lb.
Fugue ...	12.738 „

A certain quantity of tubers was kept for planting. The remainder was sold and was much appreciated by the inhabitants.

YAMS (LOCAL VARIETY)

Variety	Planted	Reaped	Average yield per acre
Red yam ...	October 1927 ...	July 1928 ...	5.121½ lb.
White yam ...	October 1927 ...	August 1928 ...	6.711 „

EDDOES AND TANNIAS

A few tubers were received from Mauritius and planted in November 1927 ; reaped in September, 1928. The tubers have been replanted on a sufficient area which will enable the establishment of proper results.

COTTON

Area planted ¼ of an acre

Variety : Long Staple Upland.

Sown	Harvested	Average yield per acre
August 1927	July 1928	440 lb (lint)

Area planted 1 acre

Sown	Harvested	Average yield per acre
17th May 1928	December 1928	40 lb (lint)

One acre of Cotton was planted on the 1st March 1928. The balls opening in July were spoiled partly by Cotton Stainers and partly by the rain.

SWEET POTATOES

*Planted July 1927 ; reaped
Feb & March 1928*

*Planted March 1928 ; reaped
July & August 1928*

Variety	Average yield per acre	Average yield per acre
Joes	6.039 lb.	12.485 lb.
Spooner	5.461½ „	10.670 „
D'Arifat	21.120 „	9.735 „
Georgia yam	3.960 „	8.250 „
Sealy's seedling	5.016 „	10.890 „
Sully	7.126 „	10.615 „
Turkey claws	6.864 „	11.550 „
No. 4	11.088 „	5.390 „
Egyptian white	3.960 „	5.355 „
Barbados barrel	6.336 „	4.830 „
T 3	6.204 „	1.870 „
Blanche	3.696 „	1.265 „
Jersey	3.960 „	825 „
No. 5	5.016 „	6.075 „
Red Bermuda	9.768 „	7.920 „
Rouge	2.508 „	3.575 „
T 4	2.112 „	1.430 „
Egyptian Bebai	1.056 „	2.695 „
Pierson	3.168 „	4.895 „

GROUND NUTS

*Planted July 1927 ; reaped
February 1928*

*Planted May 1928 ; reaped
December 1928*

Variety	Average yield per acre	Average yield per acre
Tennessee	1.320 lb.	960 lb.
Virginia Running	3.410 „	1.056 „
Bunch	2.200 „	2.040 „
Refusque	2.310 „	2.160 „
Gambia	1.870 „	898 „
Spanish pea nut	3.300 „	2.090 „
Virginia Bunch	2.860 „	366 „
Local	2.200 „	1.056 „
Virginia	1.980 „	1.200 „

ONIONS (TENERIFFE)

Variety	Planted May 1928	Reaped September 1928	Average yield per acre
White	6.348 lb
Red	5.902 lb

After the plantation had been made in the Experimental Station, the small plants which were left have been distributed to several farmers ; some of them obtained good results from their plantations—two farmers being able to export a certain quantity to Mauritius through the Agricultural Department, have been very satisfied of the trial.

FRUIT TREES (*Mango*)

The trees in the orchard blossomed well but the drought prevented a good fruiting.

LEITCHIS

The layers planted in 1926 and 1927 blossomed for the first time this year, but were not allowed to bear fruits, not being strong enough.

CITRUS FRUITS—*Shaddock*

Of the fifteen trees existing in the orchard, 9 were attacked by a gumming disease. Part of trunk and roots of one diseased plant was sent to Mauritius for examination. 7 were uprooted and burnt and the infected area disinfected. 1 tree slightly attacked and which could be treated shows no more signs of disease. The roots of the other trees were laid bare and disinfected as well as the soil in the vicinity of the plant.

LEMON, ETC.

The lemon, Cintra Mandarine and Bigarade cultivated in this plot have kept in good condition.

TREES RECEIVED FROM MAURITIUS

21 lechis layers. Of these 10 have been sold. 1 planted at The Residence, Port Mathurin. 2 planted at Solitude and 2 at the Experimental Station.

6 Avocado pears (Sharpless)	1 Apple layer
6 " " (Mauritius)	6 Grafted mangoes of different Varieties
4 <i>Passiflora laurifolia</i>	2 Jaboticaba
6 Jamalac seedlings	2 Tomato trees
2 <i>Achras Sapota</i>	6 <i>Artocarpus</i> sp. (Rima)
6 Cœur de bœuf	1 Sapote blanco
6 Chinese shaddock	1 Chinese lechis
6 Flamboyant	2 Jacaranda
2 <i>Cola Acuminata</i>	21 <i>Araucaria Cunninghamu</i>
35 Giroflier	10 Bread fruit
6 Pecan nut	

NURSERY

Plants of Eucalyptus, Filaios, Coffee, Citrus fruits, Pomme singe, Badamier and Tata-maka have been prepared. Part of these have been planted in the vicinity of the Experimental Station.

The Pine-apples grown on a small scale have shown good results.

A certain number of coconuts have been placed in nursery for germination to extend and recruit the coconut plantation at Oyster Bay.

The different vegetables grown in this plot have done well. Seeds have been kept to be distributed amongst planters for next season.

COCONUT PLANTATION

The coconut trees have progressed. Two of the trees have flowered for the first time.

Stock Farm

Sindhi Cattle

Birth : 1 bull calf. Death : Nil

	Bull.	Cow.	Bull calf	
Present number	3	3	2	Total : 8

These animals are doing well, except for the bull Rajah which although having been treated with Bone meal is still suffering from a weakness in the hindquarters.

The system of receiving at the Stock Farm, from farmers, cows to be served, has been started with in December.

10 services were recorded by the bulls (Jamnengar and Rajah III.)

Friesland

The bull Orphan Boy which was received from Mauritius in 1927 went on loan to the brothers Raffaut at Ile Michel and died there from a sun stroke in March 1928.

Catalonian Donkey

Birth 6. Death 4. Shipped to Mauritius 2

	Jack	Jenny	
Present number	6	17	Total : 23

The donkeys kept in good condition.

Pig Large Black

Birth 6. Death 4

	Boar	Sow	
Present number	2	3	Total : 5

The conditions of the pigs were not satisfactory. They suffered from "Strongylosis." Different treatments were tried. New sties and runs are being created where the animals cured from the disease will be kept.
17 services were recorded.

Nigerian Sheep

Birth 45. Death 93. Sold 26.

	Castrated ram.	Ram.	Ewe.	
Present number	24	6	40	Total: 70

The flock of sheep kept in the Stock Farm, being composed of many inferior specimens it was decided to sell at a reduced price a certain number of the animals and to castrate the exceeding number of rams. This was started with in October and as many rams were full grown, a high percentage of mortality was registered, owing to heavy loss of blood. A pair of pincers for bloodless castration has been received from Mauritius lately to obviate the difficulty experienced by the old process of castration.

Solitude

The transfer of the Mt. Lubin forest nursery to Solitude has been effected.

The Overseer of the Experimental Station has been appointed Chief Forest Ranger and has taken charge of the nursery.

Various species of trees such as: Arjuna, Mahogany, Jacques, Jamrosa, Tatamaka etc. are being raised. Trouble was experienced with the water supply. No water being obtainable from the dam supplying Port Mathurin, searches were made along the dry course of a river situated at a certain distance of the nursery and a spring has been found from which water was obtained for the nursery.

The season was not very favourable during the last months of the year causing the death of a certain number of plants.

Vanilla

The vanilla plantation has been extended. 400 new plants are growing well. Experiment with a few cuttings carried out at Mt. Lubin was satisfactory and shows that this spot is well suited for vanilla cultivation.

Different processes of curing the pods have been tried and two of these proved successful. 9,560 cured pods weighing 25 kilogs were shipped to Mauritius.

About 2,000 pods are still undergoing the curing process.

A suitable building has been erected for the curing and keeping of vanilla pods.

Coffee

The existing plants have been properly upkept. Seeds available have been sown and new plants obtained for the extension of the plantation.

La Ferme (nursery)

The nursery has been transferred to a more suitable site which has been properly fenced. A tool shed has been erected there.

The young trees chiefly filaos and pomme singe raised there have done well.

The nursery is well stocked with several varieties of young plants for reafforestation.

Reafforestation

Planting

Eucalyptus	...	12,260	Filaos	...	3,600
Vitex	...	6,550	Badamiers	...	232
Arjuna	...	1,575	Pomme Singe	...	60

Recruiting

Eucalyptus	...	60	Arjuna	...	175
Filaos	...	1,727	Pomme Singe	...	130

The mode of planting young trees as soon as they were taken from the beds, showing no goods results has now been changed.

The young plants are kept in good sized grass pots, until well established; this allowing them when planted out to be more resistant to weather conditions.

Sale of Produce

Forest Products	...	...	Rs. 1,905.06
From Experimental Station	...	...	282.05

2,187.11

In the above statement of sales from Experimental Station is not included the amount obtained for the sale of Tobacco, Donkeys, Onions and Vanilla shipped to Mauritius.

LAND TENURE

222 applications were received for 188 agricultural acres, 40 Cattle Posts, 4 Fishing Posts, 5 Shop Sites, 18 Residences and 1 Town Lot.

71 were not taken by applicant.

50 were refused.

141 leases were signed for 117 Agr. acres, 29 Cattle Posts, 4 Fishing Posts, 17 Residences, 8 Shop Sites and 2 Town Lots.

A special lease Coconut plantation for about 9 acres of land on Coco Island and Sandy Island has been signed by D. Obriel Elysée.

A Special lease Pig raising for about 40 acres at Anse Quito has been signed by P. Allas.

AGRICULTURAL CONDITIONS

From January to August the agricultural conditions were good. The different plantations thriving well, chiefly the Maize and Sweet Potatoes which are the principal foodstuffs.

The Manioc has been replanted but not on a very large scale. The cuttings received from the Agricultural Department of Mauritius in March providing to a certain number of planters the means of expanding more rapidly the culture of this Foodstuff.

The farmers seem to take more interest in the culture of small vegetables. The conditions for these were satisfactory.

Beans were planted in April and May; the plantations had to suffer from attacks of Bean Aphis, reducing the crop of this vegetable.

Small peas yielded rather well.

Potatoes gave a good yield, and showed few traces of disease. Plants of Teneriffe onions were distributed to a good number of farmers. Some of them were favoured by good results.

The conditions of grazing in the Cattle Walk during this period were good.

From September to December the agricultural conditions, due to the lack of rain, were very poor. There was a great reduction in the yield of the different foodstuffs reaped in October and November and on account of the drought, no plantations could be started with during this period. The fruit trees chiefly Mangoes and Jamrosa did not fruit well.

Fire destroying large areas of pasture in different localities, the animals suffered from a serious lack of food.

Water in most of the rivers was very scarce; many sources having dried up.

COCONUT PLANTATION IN RODRIGUES

PLANTATION MADE		
Anse Quito	...	713 plants
Anse Ally	...	492 "
Sandy Island	...	293 "
Pte. L'Herbe	...	25 "

The plantation made by M. P. Allas at Anse Quito has been entirely destroyed. Part has been eaten by animals and what was left has been maliciously destroyed during the night of the 25th December. The other plantations are in rather good condition.

PIG RAISING

M. P. Allas has been granted a special lease for about 40 acres at Anse Quito for the purpose of raising pigs on a large scale. The land has been walled up and a house for the keeper is being built.

TREFLES CO-OPERATIVE SOCIETY

4 loans amounting to Rs. 306.20 cs in capital and interest were paid in. Three applications for loans amounting to Rs. 200 were granted by the Committee.

Receipts	...	...	...	Rs. 306.20
Expenses	...	...	...	200.00
Cash in bank and in hand Rs. 165.76				

EXPORTS FROM RODRIGUES

8,484 bags of Manure		9,924 bags of Acacia seeds
39 " Oyster Shells		219 " " Beans
12 " Maize		11 " " Small peas
2 " Mushroom		6 " " Saffron & Ginger
522 " Garlic		54 " " Gum
2 " Sundries		6 cases Sundries
4,520 bales Salt Fish		1 " " Salted Pork
520 " Cattle Fish		1 " " Chillies
595 " Tobacco		14 casks Salted Lemon
54 " Raw Hides		3 " " Preserved fish
1 box Vanilla		296 pieces timber and planks
2 donkeys		256 cattle
1,364 pigs		762 sheep
2,895 goats		

EXPORTATION OF MANURE

Samples of manure and different species of insects which could be found in the vicinity of the heaps were sent to Mauritius for examination. Authorization has been obtained by the traders to export manure to Mauritius.

VISITS OF INSPECTION

In August and December, the Island was visited by the Chief Agricultural Officer. In November, a visit was paid by the G. Veterinary Surgeon.

EVINRUDE MOTOR

The Evinrude Motor which was out of order has been shipped to Mauritius where it was found unserviceable.

BOARD OF AGRICULTURE

The Board of Agriculture established under Ordinance 30 of 1912 consists of:—

His Excellency the Governor, President.

The Director of Agriculture, Vice-President.

The following members were appointed in 1928:—

The Honourable L. Noël	H. G. Ducray Esquire,
" M. Martin	E. Rouillard Esquire,
" P. Raffray	Gabriel Régnard Esquire,
" R. Gujadhur	Adrien Wiéhé Esquire,
J. A. Duclos Esquire, C.M.G.	F. A. Nicholls Esquire,
G. Antelme Esquire,	Pundit Boleram Mookteram
G. Clarenc Esquire,	Pierre de Sornay Esquire,
J. de Spéville Esquire,	P. Montocchio Esquire,
L. H. de Froberville Esquire,	Captain H. G. Hitchcock M.B.E.

Mr. G. Antelme resigned in March and was replaced by Mr. L. Bulau and Mr. A. Wiéhé who died in July was replaced by Mr. G. Mayer.

During the year 1928 there was one meeting of the Board held on February 13th.

At this meeting the following questions were discussed:—

1. Proposed Agricultural Show at Plaines Wilhems.
2. Amendment of the Proclamation on the Importation of Vine Plants and Cuttings.

PUBLICATIONS

The following publications were issued during the year:—

LEAFLET

Le Phytalus Smithi (arrow).

The following reports were prepared and submitted to the Council of Government and to the Board of Agriculture:—

Annual Report of the Department of Agriculture for 1927.

Report on Co-operative Credit Societies to 30.6.1927.

The following articles from officers of this Department were published in the *Revue Agricole*:—

La Charrue Rotative Fowler	...	... Dr. H. A. Tempany
Conférence sur la maladie des Cannes	...	... "
Les nouvelles importations de la section du petit élevage	...	... D. d'Emmerez de Charmoy
Notes sur le scarabée qui attaque les palmiers comestibles	...	... "
Albert Daruty de Grandpré	...	... "
Communication faite à la Chambre d'Agriculture sur une nouvelle espèce de cochenille destructrice de la Raquette—Opuntia Tuna,	...	... "
Commercialisation du Lapin	...	... "
La Gommose de la Canne à Sucre	...	... E. F. S. Shepherd
Le "Leaf Scald"	...	... "
La Maladie soupçonnée être le "Pokkah bong"	...	... "
Courbe de Croissance des Cannes	...	... M. Koenig
Revue Météorologique	...	... "
La canne à sucre "Uba Marot" ou Gros Cailloux	...	... N. Craig
La décoloration de l'aloès de Maurice	...	... L. Baissac
Notes supplémentaires sur le tamis automatique Peck	...	... "
Influence des variétés de cannes sur les rendements aux champs	...	... "
La question sucrière dans l'Inde	...	... "
L'importance de la vapeur sèche pour le bon fonctionnement d'une machine à vapeur	...	... R. Avice
Une méthode pour déterminer le pourcentage d'eau contenue dans la vapeur	...	... "
L'industrie de l'ananas	...	... C. O'Connor
Stomoxys Nigra Macq	...	... A. Moutia
Sur un des modes de la transmission de la mosaïque du tabac	...	... "
Le "Bitter Leaf disease" du Cocotier	...	... G. Orian
Le "Pokkah bong" de la Canne à sucre	...	... "

LEGISLATION

The following Ordinances, Proclamations and Notifications were issued during the year:—

Ordinance No. 2 of 1928—To provide for the establishment and working of a Tobacco Growers Association.

Ordinance No. 6 of 1928—To provide for the registration of areas planted in Tobacco.

Ordinance No. 13 of 1928—To amend the Animal Diseases (Consolidation)

Ordinance 1925.

Ordinance No. 17 of 1928—To amend the registration of Agricultural Chemists

Ordinance 1917.

Ordinance No. 21 of 1928—To amend the Plants Diseases Prevention Ordinance 1911.

Proclamation No. 2 of 1928—To put into force the Tobacco Ordinance 1927.

Proclamation No. 4 of 1928—To consolidate the proclamations relative to *Phytalus Smithi*.

Proclamation No. 40 of 1928—To prohibit the importation of grape-vine plants, earth etc.
 Government Notification No. 1 of 1928—To amend Art. 4 of the Rules published under
 Government Notification No. 148 of 1927 respecting delivery of Tobacco leaf at the Tobacco
 Warehouse.

Government Notification No. 16 of 1928—Syllabus of Examination for registration as
 Veterinary Surgeons.

Government Notification No. 26 of 1928—Syllabus of Instruction for Agricultural
 Cadetships.

Government Notification No. 59 of 1928—Amending Regulation No. 193 of 5.9.25.
 of Animal Diseases (Consolidation) Ordinance 1925.

Government Notification No. 61 of 1928—Amending Regulations for admission to
 Farm School.

Government Notification No. 93 of 1928—Subsidies to Stock Breeders for the importation
 of cattle.

EXPENDITURE AND RECEIPTS

The expenditure of the Department has been as follows :—

	Rs.	c.
Personal Emoluments	98,037.81	
Maintenance of Gardens	11,887.48	
General Services	1,766.64	
Prevention of Plant Pests and Diseases	2,513.37	
Prevention of Animal Diseases	2,320.79	
Upkeep of Stock	7,676.40	
Subvention to Société Horticole	1,000.00	
Travelling Expenses	10,654.82	
Miscellaneous Expenses C. O. Societies	55.74	
Maintenance of Experiment Stations	17,331.93	
Minor Industries	17,235.66	
Apparatus and Chemicals	3,939.97	
Nursery for Economic Plants	3,039.81	
Destruction of <i>Phytalus Smithi</i>	117,524.17	
Agricultural Instruction	419.28	
Upkeep of plantation at Floréal	449.52	
Dairy { Capital Expenditure	17,517.30	
Upkeep Expenses	25,851.91	
Agricultural Shows	400.00	
Services rendered by the Railways	14,508.12	
Contribution to "La Revue Agricole"	500.00	
Rental of Telephones	277.83	
Expenses Farm School	4,292.30	
Registration of Chemists	54.00	
Engine for Experimental cane crushing mill	550.00	
Extension of Cane Breeding Work	752.03	
British Industries Fair	11.80	
Building, Equipment, etc.—Farm School	4,372.48	
The receipts were :—		
Sale of Flowers and Plants	4,095.85	
Sale of Stock	1,689.42	
Services of Animals	73.00	
Sale of eggs and poultry	251.43	
Sale of milk, Cattle Station	2,896.20	
Sale of Canes	3,052.10	
Analytical fees	657.50	
Miscellaneous	3,418.96	
Sale of Tobacco	385.24	
Contribution Co-Credit Societies	1,426.00	
Veterinary fees (Customs)	1,176.00	
Destruction of <i>Phytalus Smithi</i>	43,852.82	
Loans repaid by C. Credit Societies	1,840.00	
Interest on loans	192.80	
Rent of Crown Lands at La Ferme and St Martin	177.08	
Rent of Crown Lands (Tea Plantation)	250.00	
Sale of Produce, Experimental Dairy	24,876.34	
Sale of B.C.G. Vaccine	338.25	
Sale of Soamin	432.00	

GENERAL

The Director of Agriculture served as a Nominated Member of the Council of Govern-
 ment, as a Member of the Customs Tariff Advisory Board, the Forest Board, the Board of
 the Mauritius Institute and the Advisory Committee on Fisheries, as President of the Tech-
 nical Committee of the Mauritius Sugar Industry Conference as well as serving as Chairman
 of a number of Committees of the Board of Agriculture dealing with various subjects.

August 5th, 1929.

D. d'EMMEREZ DE CHARMOY,
 Director of Agriculture.

APPENDIX II.
GOVERNMENT DAIRY, CUREPIPE, RETURN OF MILK YIELD DURING THE YEAR 1928.

MONTHS	Hilda	Bet II	Larkspur	Violet I	Hedda	Candos	Rose Belle	Rose II	Thistle	Geranium II	Cedara I	Mauricia	Cedara III	Carnation	Pretoria II	Pretoria I	Mahebourg	Flacq	Iva	Bet	Charlotte I	Bianca	Karina	Violet II
January	251½	268	103	61	147½	198	274½	14	169½	264	178	173½	101½	89	139½	284	78½	200½	139½	330½	60	313½	146½	39
February	354½	217	88	45½	122½	179	255	57	144½	292	165½	142½	127	72½	110½	215½	74½	157½	125	300	38½	368	116½	236½
March	332	203½	93	41	119½	188	263½	26½	145½	236½	170	127	...	77½	83½	146½	82	159½	114	308½	10	355	112½	217
April	330	169	73	...	110	156½	237	71	106½	208	151	93	...	68½	9	110½	72½	145½	83	268	...	308½	96	204
May	298	160½	16½	...	67	151	185	62	80½	189	138	74	...	61½	...	92	65	150	23	211½	...	292	80	168½
June	238	144	...	...	...	137½	165½	69½	58	177½	118	20	...	59½	7½	64	61½	139	...	65½	...	254½	72	144½
July	244½	135½	...	...	...	119	165	72	47½	162	118½	...	...	54½	307½	49½	60½	135	102	90	...	192½	73	142½
August	292	116½	...	...	...	113½	143	80½	...	167½	106	...	...	14	296½	11	64	132½	417	90	...	82	67½	82
September	297	96	...	90½	...	63	154½	77½	...	196½	94½	...	...	...	194	...	64	117½	410	74½	...	...	76½	102
October	265½	102	...	323½	...	79½	101½	71½	...	188	93	261½	...	...	174	17½	62½	113½	489	110½	...	...	73½	88½
November	236	93	...	320	...	80½	43	66½	...	199	89½	546½	...	...	164½	143	61½	120½	473	113	...	...	70½	92
December	238½	94	...	318	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	3,131½	1,799	373½	1,199½	566½	1,546	2,166½	800½	752	2,385½	1,514	1,438	101½	497	1,701	1,193½	813½	1,692½	2,846	2,079	108½	2,392	1,063	1,627

APPENDIX II.—(Continued)

MONTHS	Narcissus II	Daisy	Tulip	Nora	Geranium I	Narcissus 2/1	Eisenburg	Aster III	Rédut	St. Pierre	Elsa	Princess I	Princess V	M. Blanche	Charlotte II	Clara	Thora	Pretoria III	Total
January	200	216½	325	180	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4,141
February	135½	480	601½	501	315	...	...	...	...	...	...	...	...	...	...	...	...	...	4,640
March	92½	472	547	444	394	...	...	...	...	...	...	...	...	...	...	...	...	...	5,912
April	74	419	397	374½	404½	...	...	...	...	...	...	...	...	...	...	...	...	...	5,610
May	34	301	223½	328½	367½	60½	...	...	...	...	...	...	...	...	...	...	...	...	4,782½
June	...	263	271½	271½	380½	231	132½	15½	7½	...	...	...	...	...	...	...	...	...	3,807½
July	93	262	263	263	353	385½	164	307	326	...	...	...	...	...	...	...	...	73	5,101
August	185	214	244½	252½	332	245	345	164	207	165½	...	...	...	...	...	...	116	305½	5,538½
September	178½	245	203	338½	312	206	294	154	251	21½	...	...	...	...	...	...	92	299	4,845
October	193½	270	259½	253½	333	244½	297	161	213	257	...	...	...	...	...	...	162	286½	5,466½
November	166½	261½	229	239	305½	236	272	160½	182	260	14½	...	...	...	...	...	55½	269½	5,442
December	127½	274	202	292	289½	213½	267½	153	182	247½	441	105	17	69½	35½	174½	...	...	6,336
Total	1,480	3,415	3,495	3,375	3,454½	1,443½	1,951½	940½	1,527½	1,144	455½	105	17	69½	35½	1,932	1,490	1,504½	61,622

DEPARTMENT OF AGRICULTURE

APPENDIX III

Distribution of Sugar Cane Diseases in Mauritius in 1928 (other than those listed in appendices IV and V.)

District,	Pineapple disease	Smut	Root disease	Streak	Pokkah-bong	Bunch Top	Top Rot	Helminthosporium Leaf Spot. (Heavy attacks of)
Pample-mousses	One Estate	Nine Estates varieties affected : M. 131, L. 252, D. 109, D. K. 74 & W. Tanna	None reported	None reported	Five Estates Varieties affected : various	None reported	One Estate Variety affected : M. 512	None reported
Riv. du Rempart	One Estate	Four Estates Varieties affected : D. K. 74, M. 131, D. 109 & R. P. 8	None reported	None reported	One Estate Varieties affected : various	None reported	None reported	None reported
Flacq	None reported	None reported	Three Estates Varieties affected : W. Tanna and M. 55	One Estate Variety affected : R. P. 8	One Estate Varieties affected : Various	None reported	None reported	None reported
Black River	None reported	Two Estates Variety affected : M. 131	One Estate Varieties affected : W. Tanna M. 55 and M. 131	None reported	None reported	One Estate Variety affected : M. 87	None reported	None reported
Grand Port	Two Estates	One Estate Variety affected : M. 131	One Estate Variety affected : M. 55	None reported	None reported	Three Estates Varieties affected : D. K. 74 & W. Tanna	One Estate Variety affected : W. Tanna	One Estate. Variety affected : W. Tanna
Savanne	One Estate	None reported	None reported	None reported	None reported	None reported	Three Estates Variety affected : W. Tanna	One estate. Variety affected : W. Tanna
Moka	One Estate	One Estate Variety affected : W. Tanna	One Estate Varieties affected : P. O. J. 213 and M. 55	One Estate Variety affected : R. P. 8	Three Estates Varieties affected : Various	None reported	None reported	None reported
Plaines Wilhems	Three Estates	One Estate Varieties affected : R. P. 8 and M. 131	One Estate Variety affected : W. Tanna	None Reported	One Estate Varieties affected : various	None reported	One Estate Variety affected : W. Tanna	None reported

[illegible]

Late Part Pamplémousses ...		2	63.0	8.1	3.4	4.7	7.0	36.3	1.8	0.4	...	...	15.4	41.5	...	...	...	...	77.5	0.7	0.7	...	2.5	48.4
Riv. du Rempart	{ 6 7 }	Mean	8.0	12.3	4.1	8.2	5.9	16.4	...	...	...	...	...	...	...	...	...	...	60.3	39.7	3.6	36.1	...	7.9
			15.1	2.3	2.1	0.2	7.4	23.9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			13.2	6.7	3.0	3.7	6.7	20.2	60.3	39.7	3.6	36.1	...	7.9
Flacq ...	{ 15 19 20 }	Mean	5.6	3.5	2.5	1.0	5.2	14.8	2.9	...	...	...	0.3	17.8	...	...	...	...	...	...	...	...	...	...
			6.8	20.6	18.8	1.8	1.8	9.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			13.0	25.3	11.3	14.0	5.0	17.7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Grand Port	{ 37 37A 39 43 44 45 }	Mean	8.1	15.4	10.4	5.0	3.0	13.7	2.9	...	...	...	0.3	17.8	...	...	...	...	...	...	...	...	...	...
			33.0	8.7	6.2	2.3	2.0	4.2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			0.5	8.1	4.0	4.1	...	13.0	60.2	5.1	4.4	0.7	1.4	4.8
Savanne	{ 55 56 59A 59B }	Mean	9.5	3.2	0.7	2.5	...	6.7	5.0	7.4	6.2	1.2	...	11.2	...	...	...	...	...	...	...	...	...	...
			40.0	5.0	3.0	2.0	0.7	3.2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			3.0	15.5	12.5	3.0	...	4.5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
General Mean ...	{ 55 56 59A 59B }	Mean	16.7	5.1	3.5	1.6	0.7	4.1	5.0	7.4	6.2	1.2	...	11.2	...	...	...	...	...	...	...	...	...	...
			18.6	12.3	7.2	5.1	3.4	12.8	3.1	2.0	7.8	27.8	69.0	11.4	2.6	8.8	1.5	23.3

District	WHITE TAINA						DK/74						M 131						M 55					
	Leaf Scald and Gummosis			Attacks of			Leaf Scald and Gummosis			Attacks of			Leaf Scald and Gummosis			Attacks of			Leaf Scald and Gummosis			Attacks of		
	Leaf Symptoms only	Leaf and Stem	%	Exuding Gum	Not exuding Gum	Borels	Leaf Symptoms only	Leaf and Stem	%	Exuding Gum	Not exuding Gum	Borels	Leaf Symptoms only	Leaf and Stem	%	Exuding Gum	Not exuding Gum	Borels	Leaf Symptoms only	Leaf and Stem	%	Exuding Gum	Not exuding Gum	Borels
PAMPLEMOUSES	18.8	1.5	...	...	...	...	9.2	0.2	...	...	...	...	8.9	1.1	...	...	...	...	29.2	73.8	...	...	...	...
	48.8	4.4	2.5	1.9	...	...	4.2	0.3	...	...	...	...	66.1	0.8	...	...	...	...	0.6	91.7	...	...	...	...
	28.3	2.5	...	...	...	...	7.5	0.3	...	...	...	...	45.3	0.9	...	...	...	...	0.4	81.9	...	...	...	...
R. DU REMPART	17.6	2.0	1.5	0.5	...	...	...	...	...	...	...	...	26.2	10.4	...	...	...	...	1.0	...	...	...	...	...
	10.6	6.3	2.5	3.8	...	...	4.7	...	...	...	...	...	43.3	4.9	...	...	...	...	2.5	60.3	...	...	...	...
	14.4	4.0	1.9	2.1	...	...	1.3	...	...	...	...	...	32.4	8.5	...	...	...	...	1.4	14.7	...	...	...	...
FLACQ	1.8	8.0	...	...	...	...	1.0	0.8	...	...	...	...	1.8	0.3	...	...	...	...	1.0	...	...	...	...	...
	8.1	15.4	10.4	5.0	...	...	1.5	...	...	...	...	...	39.0	2.3	...	...	...	...	3.5	...	...	...	...	...
	4.4	11.1	...	...	...	...	1.4	0.6	...	...	...	...	14.0	1.0	...	...	...	...	1.8	...	...	...	...	...
BLACK RIVER	46.9	16.0	...	...	...	...	8.4	5.1	...	...	...	...	64.0	7.7	...	...	...	...	...	76.0	...	...	...	...
	31.9	12.8	5.2	7.6	...	...	8.7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	41.1	14.8	...	...	...	...	8.5	3.7	...	...	...	...	64.0	7.7	...	...	...	...	...	76.0	...	...	...	...
GRAND PORT	35.7	11.9	...	...	...	...	...	...	...	...	...	...	57.4	8.0	...	...	...	...	0.4	...	...	...	...	...
	15.6	12.1	7.0	5.1	...	...	13.8	1.8	...	...	...	...	60.4	9.0	...	...	...	...	9.0	70.1	...	...	...	...
	25.0	11.2	...	...	...	...	13.8	1.8	...	...	...	...	59.5	8.4	...	...	...	...	1.9	70.1	...	...	...	...
SAVANNE	10.5	15.2	...	...	...	...	0.2	1.4	...	...	...	...	41.3	2.0	...	...	...	...	...	20.8	...	...	...	...
	20.6	9.0	3.5	5.5	...	...	4.2	2.3	...	...	...	...	15.1	2.8	...	...	...	...	1.6	...	...	...	...	...
	16.0	11.7	...	...	...	...	1.9	1.8	...	...	...	...	24.7	2.5	...	...	...	...	1.0	20.8	...	...	...	...
MOKA	1.0	24.7	1.8	22.9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	7.0	9.2	2.5	6.7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	5.0	14.3	2.3	12.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
PLAINES WILHEMS	0.2	24.2	5.7	18.5	...	...	1.5	3.6	...	...	...	...	...	...	...	...	...	...	...	26.7	...	...	...	...
	4.8	12.3	4.0	8.3	...	...	2.1	2.2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	2.4	18.5	4.9	13.6	...	...	1.9	3.1	...	...	...	...	...	...	...	...	...	...	...	26.7	...	...	...	...
General Mean	15.6	10.5	...	...	...	...	5.4	1.1	...	...	...	...	37.0	3.8	...	...	...	...	1.2	56.3	...	...	...	...

N.B.—The means are proportional to the number of canes examined.

(Showing also borer incidence)

CANE DISEASE SURVEY—1928

(CANES EXAMINED AT MILL CARRIER)—LATE PART OF CROP

Coast Belt

District	Estate Number	WHITE TANNA				D. K/74				M. 131				M. 55			
		Exuding Gum	Not exuding Gum	Affected with Red Rot	Attacked by Borers	Exuding Gum	Not exuding Gum	Affected with Red Rot	Attacked by Borers	Exuding Gum	Not exuding Gum	Affected with Red Rot	Attacked by Borers	Exuding Gum	Not exuding Gum	Affected with Red Rot	Attacked by Borers
Pamplémousses	5	% ...	% ...	% ...	% ...	% ...	% ...	% ...	% ...	% ...	% ...	% ...	% ...	% ...	% ...	% ...	% ...
Riv. du Rempart	9	0.5	11.5	2.0	29.0	...	...	...	...	...	...	...	...	...	...	...	...
Flacq	13	10.7	2.3	3.7	13.0	1.0	1.0	16.0	29.0	3.5	0.5	1.0	10.0	...	...	...	...
Black River	32	...	...	...	...	...	...	...	...	8.0	2.0	5.0	23.0	...	...	...	...
Grand Port	40	2.0	26.0	...	...	...	...	...	...	...	...	...	...	1.0	1.0	...	0.
	41	11.0	3.0	12.5	20.5	...	...	...	...	5.0	3.0	6.0	13.0	...	...	...	...
	42	7.3	5.3	0.3	4.3	0.5	0.5	7.5	16.0	5.0	2.0	...	5.0	10.0	4.0	...	12.0
	46	2.0	30.0	...	...	6.0	6.0	8.0	14.0	8.5	8.5	0.5	2.0	...	...	...	...
	47	...	...	...	...	5.0	5.0	7.5	23.8	9.0	8.0	8.0	39.0	...	...	...	...
Mean		6.9	11.1	3.7	7.7	0.8	2.9	7.6	17.1	7.2	6.0	3.0	12.2	4.0	2.0	...	4.0
Savaune	48	13.5	1.5	1.5	3.0	...	...	...	...	2.0	...	3.0	6.0	1.0	0.	0.	6.0
	54	5.3	8.3	3.3	11.0	0.	...	4.0	26.0	...	...	...	...	1.0	2.5	1.5	17.5
	57	5.0	...	6.0	9.0	0.	...	3.0	9.0	...	...	...	...	...	...	...	...
	59	...	...	...	...	4.0	...	0.	...	...	...	...	...	...	...	...	...
	51	4.0	2.0	1.5	7.0	...	...	...	...	6.0	...	0.	6.0	...	...	...	...
Mean		7.0	4.0	2.8	7.8	1.3	...	2.3	11.6	4.0	...	1.5	6.0	1.0	1.2	0.7	11.7
Mean for the belt		6.9	7.0	3.2	10.7	1.1	1.7	6.7	16.3	5.4	3.0	2.7	12.6	2.4	1.9	1.4	7.5

N.B.—The means are proportional to the number of canes examined.

Appendix V(b)

CANE DISEASE SURVEY—1928
(CANES EXAMINED AT MILL CARRIER)—LATE PART OF CROP

(Showing also borer incidence)

MIDDLE BELT

District	Estate Number	WHITE TANNA				D. K/74				M. 131				M. 55			
		Exud- ing Gum	Not Exud- ing Gum	Affect- ed with Red Rot	At- tacked by Borers	Exud- ing Gum	Not Exud- ing Gum	Affect- ed with Red Rot	At- tacked by Borers	Exud- ing Gum	Not Exud- ing Gum	Affect- ed with Red Rot	At- tacked by Borers	Exud- ing Gum	Not Exud- ing Gum	Affect- ed with Red Rot	At- tacked by Borers
Pamplemousses	1	...	%	%	%	...	...	...	...	...	...	...	...	% 2.0	% x	% x	% x
	2	8.0	2.5	0.5	x	...	...	...	...	...	...	...	...	0.7	x	x	x
	Mean	8.0	2.5	0.5	x	...	...	...	...	...	...	...	...	1.2	x	x	x
Riv. du Rempart	6	4.6	8.8	5.4	16.2	...	...	...	...	...	...	...	...	7.0	1.0	2.0	22.0
	7	6.5	2.0	5.0	14.5	...	...	...	...	...	...	...	...	...	...	...	...
	Mean	5.4	5.9	5.2	15.4	...	...	...	...	...	...	...	...	7.0	1.0	2.0	22.0
Flacq	15	1.6	3.2	x	3.2	...	...	...	...	x	2.0	x	x	...	...	...	...
	19	6.5	6.5	1.0	1.5	...	...	...	...	x	...	x	x	...	...	...	...
	Mean	3.7	4.7	0.4	2.4	...	...	...	...	x	2.0	x	x	...	...	...	...
Grand Port	37	7.0	1.7	3.0	4.7	...	...	...	...	...	...	...	...	...	...	...	...
	39	12.0	3.2	1.0	4.7	...	...	...	...	8.0	6.0	7.0	4.0	...	...	...	...
	43	5.0	15.0	x	x	...	...	...	...	...	...	...	...	...	...	...	...
	44	5.2	23.1	3.8	5.2	...	...	...	...	...	...	...	...	...	...	...	...
	45	8.0	40.0	2.0	1.0	...	...	...	...	...	...	...	...	...	...	...	...
	Mean	7.9	12.9	2.3	5.0	...	...	...	...	8.0	6.0	7.0	4.0	...	...	...	...
Savanne	55	3.5	4.1	4.7	11.2	...	...	...	...	x	1.0	6.0	23.0	...	...	...	...
	56	10.0	4.0	0.5	13.0	...	...	...	...	2.0	2.0	x	14.0	...	...	...	...
	Mean	7.0	4.1	2.4	12.2	...	...	...	...	1.0	1.5	3.0	18.5	...	...	...	...
Mean for the belt	...	6.8	7.5	2.5	7.3	...	...	...	...	2.5	2.8	3.2	10.2	3.0	0.3	0.6	6.3

N.B.—The means are proportional to the number of canes examined.

Appendix V (c) CANE DISEASE SURVEY—1928 (Showing also Borer incidence)
(CANES EXAMINED AT MILL CARRIER)—LATE PART OF CROP

District	Estate Number	WHITE TANNA				D.K/74				M. 131				M. 55			
		Exuding Gum	Not exuding Gum	Affected with Red Rot	Attacked by Borers	Exuding Gum	Not exuding Gum	Affected with Red Rot	Attacked by Borers	Exuding Gum	Not exuding Gum	Affected with Red Rot	Attacked by Borers	Exuding Gum	Not exuding Gum	Affected with Red Rot	Attacked by Borers
Moka	...	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	27	1.2	12.8	3.5	9.3	...	...	...	...	...	...	...	...	24.0	3.0	...	4.0
	29	1.0	10.0	2.0	6.0	...	...	...	...	...	...	...	...	...	...	...	...
Mean	30	7.0	1.7	0.3	3.3	...	...	...	...	...	...	...	...	...	...	...	...
	...	4.7	5.5	1.2	4.9	...	...	...	...	...	...	...	...	24.0	3.0	...	4.0

Plaines Wilhems	33	...	...	...	...	...	...	...	...	...	...	...	...	12.0	0.	...	26.0
	36	5.5	17.0	...	3.5	...	...	...	...	...	...	...	...	3.6	4.5	...	14.0
	...	5.5	17.0	...	3.5	...	...	...	...	...	...	...	...	6.3	3.0	...	18.0
Mean for the Plateau	...	4.9	8.7	0.9	4.4	...	...	...	...	...	...	...	...	10.8	3.0	...	14.5

N.B.—The means are proportional to the number of Canes examined.

Appendix V

CANE DISEASE SURVEY—1928

(Showing also borer incidence)

(CANES EXAMINED AT MILL CARRIER)—LATE PART OF CROP

SUMMARY

District	Number of Estates examined	WHITE TANNA				DK/74				M 131				M 55			
		Exuding Gum	Not exuding Gum	Affected with Red Rot	Attacked by Borers	Exuding Gum	Not exuding Gum	Affected with Red Rot	Attacked by Borers	Exuding Gum	Not exuding Gum	Affected with Red Rot	Attacked by Borers	Exuding Gum	Not exuding Gum	Affected with Red Rot	Attacked by Borers
		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Pamplémousses	3	8.0	2.5	0.5	...	...	...	...	...	...	...	...	...	1.7	1.1	...	...
Rivière du Rempart	3	5.4	7.6	4.2	19.5	...	...	...	...	2.3	...	5.0	23.0	7.0	1.0	2.3	2.0
Flacq	3	6.5	3.7	1.7	6.6	1.0	1.0	16.0	...	8.0	1.0	0.7	6.6	...	...	...	...
Black River	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Grand Port	10	10.9	12.9	3.0	6.2	0.8	2.9	7.6	17.1	8.8	2.0	5.0	23.0	...	...	...	4.0
Savanne	7	7.0	4.0	2.6	9.1	1.3	...	2.3	11.6	2.5	7.2	4.4	13.0	4.0	2.0	...	11.7
Moka	3	4.7	5.5	1.2	4.9	...	...	...	...	...	0.7	2.2	12.2	1.0	1.2	0.7	4.0
Plaines Wilhems	2	5.5	17.0	...	3.5	...	...	...	...	...	...	...	...	24.0	3.0	...	18.0
Total	32													6.3	3.0	...	...
Mean for the Whole Island		6.4	8.0	2.5	8.0	1.0	1.5	6.6	16.5	4.6	2.9	2.9	12.4	4.6	1.8	0.8	9.4

N.B.—The means are proportional to the number of Canes examined.

